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Arkansas Business and Economic Review

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Volume 20, Number 2, 1987

contents

An Economic Forecast for Arkansas Through 1988

Arkansas Commercial Bank Capacity for Asset Growth:
Is Capital a Constraint?

The Individual and the Organization:
Their Search for Accommodation

Effect of the Tax Reform Act

Selected Arkansas and U.S. Economic Indicators

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AN ECONOMIC FORECAST FOR ARKANSAS THROUGH 1988

Harry French
Associate Economist
University of Arkansas, Fayetteville

INTRODUCTION

In June, as a part of the ongoing program to provide timely economic and business information to Arkansans, the Bureau of Business and Economic Research, mailed a questionnaire on Arkansas' economic future over the following year and a half. Recipients were 240 Arkansans whose jobs require them to be knowledgeable on economic events and trends at the state, regional, and nationl levels. Those surveyed composed a purposive sample which included academics, business people, and public officials. Fifty-eight usable returns were received for a response rate of 24 percent which, without follow-up, is statistically acceptable. Note that this rate of return is about 10 percentage points below any experienced in our similar surveys in the past. Since the mailout was a month earlier than any of the previous ones and since the spring transition from winter to summer appeared to be shorter than usual, the sudden drop in the response rate may simply be attributed to the failure of the attraction of an uncompleted questionnaire to outweigh the outdoor allure of the "gone fishing" syndrome of early summer. A more constructive analysis will be attempted if, in our survey next year, the return rate is still down or falls again.

The cover letter and questionnaire itself are attached as Exhibit 1 and Exhibit 2, respectively. Note that in the mailing, a copy of the analysis of the 1986 return was included but is not reprinted here.[1] Note too that the percentages for each distribution may not total 100 percent because of rounding.

ANALYSIS

In Exhibit 2, entered beside each subitem of items 1-14 and 16-20, inclusive, is the percentage distribution of responses for the item. In item 15, continuing economic recovery, 29 percent of the respondents felt that there was *less* than an even chance that the recovery would extend to yearend 1988, and 71 percent said that the chance was even or better, with 2 percent of all respondents declaring that continuation was a *sure thing*. For 1987, with the additional experience since the survey last year, respondents have raised their expectations from 40-60-2% to 9-91-4% for the respective categories of *less than even, even or better*, and a *sure thing*.

Despite the general buoyancy of the indicated feelings in item 15, the overall optimism is guarded as there are few outright consensuses or even simple majorities indicated. Items 1 through 3, wage rates, consumer loans and capital investment, respectively, reflect at best a dispirited outlook and sluggish spending. Item 4, price level, shows an expected rise of 3 percent or more which, of course, implies that inflationary pressures lurk in many minds.

In both parts of item 5, residential building, the forecast envisions gloom with the level itself and our national standing both falling. In item 6, retail sales, the responses anticipate modest improvement; but in item 7, unemployment, the feeling is that it will push up into the 9-10 percent bracket by the end of 1988. Item 8, civilian labor force, reflects at best a very modest increase while item 9, population, shows an almost static situation. Item 10, farm

cash receipts, depicts a glint of optimism for an increase over the period; however, the "no opinion" category is appreciable and worrisome perhaps because there is a lot of talk about the complete phase out of farm price supports. In item 11, personal income, the respondents feel that increases in real income will slow as the economy moves into 1988; this feeling ties back to the already noted indication of rising inflationary pressures.

In item 12, Dow Jones Industrial Average, for the current year, the respondents still are reluctant to accept the rapid rise over the past few years and are apparently looking over their shoulders to catch a glimpse of a "bear" on the charge. For 1988, the outlook appears to spread over a broader range of possibilities and is still "bullish" with some 10 percent opting for a level over 2800.

On the national issues items, the respondents reflect remarkably consistent attitudes with those of the 1986 survey. For example, the double digit percentages are almost the same for the four issues identified last year — budget deficits, balance of trade deficits, foreign imports and investment, and interest rates — with a fifth issue, inflation, intruding in 1988. In item 14, economic problems, the responses identify four problem areas—three of which, declining productivity and growth, balance of trade deficits, and budget deficits, were singled out on the survey in 1986—with interest rates for 1987 and inflation for 1988 having replaced foreign imports and investments. In item 16, inflation and unemployment, the survey results show that tax credits and price system regulation continue as important recommendations but with trade and tariff barriers on selective imports replacing the elimination of the minimum wage for teenagers as a third choice.

In the undated issues and development areas, with respect to item 17, school standards, and 18, higher education, the feeling seems to be a need to increase taxes, consolidate some programs and schools, and raise tuition and fees. There appears to be a firm resolve to "get on" with the new standards. As regards item 19, goals for prosperity and quality of life, results were somewhat ambiguous on the goals as respondents prefer a broad spectrum of action with ideas almost equally apportioned among the four choices. Similarly, for item 20, the revenue raising programs envision across the board action with some focus on establishing a state lottery.

There were several recommendations proposed under the "other" categories of items 10, 12, 16, and 20. However, those suggestions were only mentioned once or were considered a narrower aspect of a specifically listed subitem and therefore, are not cited here.

Still, there are powerful known forces at work which to date are as yet unforecastable but could exert a shake up of the economy for either better or worse. Two such forces are, first, the change from Volcker to Greenspan as chairman of the Federal Reserve and, second, the treatment of "second homes" under the new tax law may cause ripples in the construction and real estate sectors.

CONCLUSION

There seem to be misgivings about the exceedingly slow reduction of the budget deficit and the lack of steady improvement in the balance of trade. That unease is augmented by the evidence that inflation is again on the rise. These expectations promote a disquiet that pervades the economic atmosphere. Thus, the economy is still "on track" and presumably healthy but the forecasters are not completely happy with the prospects. Even so, they seem to say, "It's better than some alternatives."

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[1]Harry French, and W.R. Smith, Jr., "An Economic Forecast for Arkansas through 1987," *Arkansas Business and Economic Review*, Volume 19, Number 3, 1986, pp. 1-2.

EXHIBIT 1

BUREAU OF BUSINESS AND ECONOMIC RESEARCH
(501) 575-4151
Fayetteville, Arkansas 72701

UNIVERSITY OF ARKANSAS · College of Business Administration

May 1, 1987

Dear Sir/Madam:

A forecast of the trend of Arkansas economic activity over the next eighteen months is a natural and desirable extension to supplement the research published in the Arkansas Business and Economic Review which is distributed to more than 2,500 Arkansas subscribers. Accordingly, the Bureau staff has developed a questionnaire to be sent to some two hundred Arkansas residents who are knowledgeable of the State's economy and can provide expert opinions on the economic trend. The survey sample consists of selected representatives from academia, business, and government. Predictions are sought for the yearend positions of calendar years 1987 and 1988. In this regard, extracted from Vol. 19, No. 3, 1986, Arkansas Business and Economic Review, and enclosed for your information, is the highlight summary of the 1986 survey.

You are one of those who are requested to express their opinions on Arkansas' ongoing economic activity. You are asked to indicate your views on items in the attached questionnaire and to return it to:

Bureau of Business and Economic Research
College of Business Administration
University of Arkansas
Fayetteville, Arkansas 72701

In addition to your responses to the specific questions, please feel free to add suggestions on other subject areas that should be included in future economic forecast surveys. Also, note that you are not asked to identify yourself with your responses; but your submission will be accorded confidentiality if you wish to identify yourself in responding.

You are requested to return your completed questionnaire as soon as possible but not later than June 1, 1987, so that the resulting forecast can be included in the issue of the Review to be published this fall. Your participation will be appreciated. An addressed, postage-paid envelope is enclosed for your convenience.

Sincerely,

Phillip Taylor
Director

EXHIBIT 2

ECONOMIC CONDITION SURVEY

Part I: Estimated Key Economic Trends as of calendar yearends 1987 and 1988

Please indicate the phrase which most nearly corresponds with your views. As a point of reference, unless specified otherwise, all change is to be estimated for the 1987 and 1988 yearend levels (base = yearend 1986).

1. Wage rates in real terms in Arkansas will be:

1987		1988	1987		1988
12.1%	Down	13.8%	51.7%	About the Same	41.4%
36.2%	Up	44.8%	0.0%	No Opinion	0.0%

2. Total consumer loans in Arkansas will be:

1987		1988	1987		1988
31.0%	Down	38.6%	31.0%	About the Same	21.1%
36.2%	Up	38.6%	1.7%	No Opinion	1.7%

3. Availability of capital investment funds for expenditure in Arkansas on plant and equipment will be:

1987		1988	1987		1988
27.6%	Down	27.6%	27.6%	About the Same	29.3%
43.1%	Up	41.4%	1.7%	No Opinion	1.7%

4. Price level for consumers in Arkansas will be:

1987		1988	1987		1988
0.0%	Down more than 1%	0.0%	37.9%	Up 1% to 3%	31.6%
1.7%	Down 1% or less	0.0%	37.9%	Up 3% to 5%	40.3%
12.1%	About the same	8.8%	1.7%	Up more than 5%	15.8%
8.6%	Up 1% or less	3.5%	0.0%	No Opinion	0.0%

5a. Value in current dollars of new residential building in Arkansas ($739.5 million in 1986) will be:

1987		1988	1987		1988
37.9%	Below 1986 level	34.5%	19.0%	About the same	31.0%
41.4%	Above 1986 level	32.7%	1.7%	No Opinion	1.7%

b. Arkansas' residential building experience, relative to that of the U.S., will be:

1987		1988	1987		1988
46.5%	Worse	37.9%	37.9%	About the Same	43.1%
13.8%	Better	17.2%	1.7%	No Opinion	1.7%

6. Level of commerical-industrial activity in Arkansas as measured by retail sales will be:

1987		1988	1977		1988
17.2%	Down	10.3%	34.4%	About the Same	34.5%
48.3%	Up	55.2%	0.0%	No Opinion	0.0%

7. Unemployment rate in Arkansas (9.1% in December 1986) will be:

1987		1988	1987		1988
0.0%	Less than 7	1.8%	42.1%	Between 9 & 10%	32.1%
14.0%	Between 7 and 8%	25.0%	0.0%	Over 10%	7.1%
43.9%	Between 8 and 9%	33.9%	0.0%	No Opinion	0.0%

8. Civilian labor force (1,067,900 in December 1986) in Arkansas will be:

1987		1988	1987		1988
6.9%	Down	8.6%	56.9%	About the Same	43.1%
36.2%	Up	48.3%	0.0%	No Opinion	0.0%

9. In comparison with the U.S. average, Arkansas' total population change will be:

1987		1988
37.9%	Below the U.S. average	36.2%
44.8%	About the same as the rest of the country	37.9%
17.2%	Above the U.S. average	25.9%

10. Total farm cash receipts in Arkansas for 1987 and 1988 in current dollars ($3,263 million in 1985 and estimated $2,925 million in 1986) will:

1987		1988
28.1%	Decrease from the 1986 current dollar level	21.0%
47.3%	Remain about the same as 1986 current dollar amount	28.1%
15.8%	Increase from the 1986 current dollar level	42.1%
8.8%	No Opinion	8.8%

11. With respect to the estimated 1986 annual total of $26,000 million, total annual Personal Income for Arkansans in real dollars (current 1987 and 1988 dollars adjusted for inflation to 1986 dollars) will:

1987		1988
15.5%	Fall	22.4%
29.3%	Rise	36.2%
55.2%	Remain about the same	41.4%
0.0%	No Opinion	0.0%

12. The Dow Jones Industrial Average (approximately 1545. at yearend 1985, 1895. at yearend 1986 and 2330. at monthend March 1987) will be:

1987		1988
0.0%	Less than 1700	1.7%
1.7%	Between 1700 & 1899	5.3%
3.5%	Between 1800 & 1999	12.3%
22.8%	Between 2000 & 2299	15.8%
22.8%	Between 2300 & 2399	12.3%
17.5%	Between 2400 & 2499	12.3%
21.0%	Between 2500 & 2599	15.8%
3.5%	Between 2600 & 2799	3.5%
0.0%	Over 2800	10.5%
7.0%	No Opinion	10.5%

13. Choose the five (5) issues that you feel will exert the most influence on the U.S. economy:

1987		1988
8.1%	Inflation	14.0%
16.8%	U.S. budget deficits	17.2%
1.8%	Weather effects on agriculture and energy usage	0.7%
0.3%	Ecological imbalance and environmental pollution	1.0%
14.4%	Foreign imports and investments in domestic markets	11.9%
7.0%	Foreign restrictions to open-market trading	5.3%
3.9%	Unemployment	3.5%
1.7%	Energy supply and cost	3.9%
7.3%	Unfavorable international exchange rates	5.9%
14.0%	Balance of trade deficits	13.7%
13.0%	Interest rates	13.3%
4.6%	New federal laws, regulations or court decisions	3.9%
3.9%	Money supply	3.2%
1.4%	International economic and defense commitments	1.0%
1.8%	Other	1.4%

14. In our society, the three (3) most serious economic problems will be:

1987		1988
9.7%	Foreign imports and investment in domestic market	7.0%
5.7%	Unemployment	6.5%
6.8%	Inflation	15.9%
16.0%	Declining productivity and real growth	14.1%
19.4%	Balance of trade deficits	16.5%
23.4%	U.S. budget deficits	25.3%
11.4%	Interest rates	8.8%
5.1%	International exchange rates	4.1%
2.3%	Other	1.7%
	"	
	"	

15. What is the percent chance (100% = certain) that the recovery in the domestic economy will continue through 1987? 9-91-4 %, through 1988? 29-71-2%

16. With the recent U.S. experience as regards inflation and unemployment, indicate those approaches that you recommend to reduce unemployment:

1987		1988
4.2%	Reinstitute the military draft	4.2%
2.5%	Create more government "public service" jobs	2.5%
2.5%	Increase public works spending	2.5%
32.8%	Tax credits to stimulate employment and upgraded job training	32.2%
28.7%	Let the price system regulate the domestic market	29.7%
0.8%	Broaden entitlement programs	0.8%
16.3%	Impose trade and tariff barriers on selective imports	16.3%
0.8%	Increase defense spending	0.8%
11.5%	Other	11.0%
	"	
	"	

Part II: Undated Current Economic Issues or Developments

17. With state revenues below projections and federal revenue-sharing down, new public school education standards will not likely be met during the next five years unless action is taken to:

(check one or more items)

25.2% a) increase state taxes
9.2% b) make drastic cuts in government services and personnel
19.3% c) raise substantially local communities' school millages
29.4% d) urge widespread, voluntary consolidation of school districts
14.3% e) delay/defer selected standards
2.5% f) other _____

_____

18. Higher education, essential to the vitality and technical development of the state, is suffering from underfunding because of state revenue shortfalls. It can only remain a healthly contributing facility of the state if action is taken to:

(check one or more items)

27.4% a) raise state taxes
14.5% b) curtail competing intrastate degree programs
28.2% c) raise tuition and fees
12.9% d) close down nonself-supporting academic and athletic programs
11.3% e) create a single, consolidated state higher education system
5.6% f) other _____

_____

19. To ensure an acceptable prosperity and quality of life in Arkansas, the state seeks to broaden its commercial/industrial base, to increase productivity, raise the technical competence of its labor force, and increase employment while reducing the unemployment rate. These goals can be accomplished only if action is taken to:

(check one or more items)

21.9% a) encourage colleges and universities to provide entrepreneurial assistance, technical guidance and incubator services
19.3% b) actively promote the state in regional and national media campaigns
26.3% c) sponsor initiatives such as lower tax rates and accelerated depreciation schedules for immigrating plants, factories, and businesses
28.1% d) provide funding for higher education and vocational technical programs in support of both the "quick-fixing" of specific industrial training shortages and the continuous upgrading of competency of the Arkansas labor force
4.4% e) other _____

_____

20. Falling state revenues and reduced federal revenue-sharing have created severe funding problems for public school education standards, higher education, and prison programs (to name only three of those currently in the news). Obviously, the state must increase revenues if it is to cope effectively and expeditiously with such problems. What revenue-gaining policies would pose the least "drag" on the state economy?

14.3% a) increase sales taxes without exemption
16.3% b) increase sales taxes with exemptions for food purchases, heating fuels and prescribed medicines
8.1% c) raise income tax rates
25.5% d) institute a state lottery
14.3% e) extend the racing season at Hot Springs
7.1% f) permit other intrastate pari-mutuel facilities
14.3% g) other _____

_____

ARKANSAS COMMERCIAL BANK CAPACITY FOR ASSET GROWTH: IS CAPITAL A CONSTRAINT?

Charles G. Martin[1]
Associate Professor of Finance
University of Arkansas, Little Rock

Richard K. Ford
Associate Professor of Economics
University of Arkansas, Little Rock

INTRODUCTION

Irvine H. Sprague, former chairman of the Federal Deposit Insurance Corporation and insider witness to numerous commercial bank failures, recently gave a succinct industry forecast: "Banks are failing in record numbers and will continue to do so for the foreseeable future."[2] While Arkansas has not experienced a recent major commercial bank collapse, banking difficulties in the state have been widely publicized, and one significant savings and loan association failure has occurred. It is not unreasonable to conclude that the popular view of local banking conditions is supportive of Sprague's national assessment.

When banks fail, capital adequacy is invariably a public policy issue—one which is among the oldest in the history of bank regulation. The issue survives despite little empirical evidence relating failure rates to capital requirements. Nonetheless, new proposals to strengthen capital standards are likely to be forthcoming so long as the present high bank-failure rate persists.[3]

While increases in capital standards may do little to prevent bank failures, lower asset growth rates can result. In this paper are examined the capital positions reported by Arkansas commercial banks as compared to other commercial banks in the Eighth Federal Reserve District. The intent of the study is to determine, from an ownership perspective, the extent to which the capacity for bank asset growth in the state may or may not be constrained by existing or proposed new capital requirements.[4]

BANK CAPITAL ADEQUACY: AN OWNERSHIP PERSPECTIVE

To someone unfamiliar with the intricacies of bank regulatory policy, capital adequacy would seem a standard financial topic. Viewed like any other business the capital of a bank should equal the market value of its shares, and a bank's capital structure should be a function of market-based risk/return trade-offs. Actually, market factors play a small explicit role in determining whether or not capital is deemed adequate by regulators.[5] Furthermore, it is not altogether clear whether changes in capital guidelines have a predictable impact on bank risk.[6]

From the perspective of the owners of a bank, however, the issue is far less complex. Prescribed minimum capital ratios must be maintained or the bank must cease doing business. More routinely, regulated capital requirements can conflict potentially with local competitive market conditions, thus affecting the market value of bank shares. To understand this problem, one needs to understand how bank capital is currently measured and how fixed capital ratios influence a bank's capacity for asset growth.

Capital Measurement

Bank capital, for the purpose of setting regulatory standards, is measured using reported accounting data. Definitions are therefore important. Over the years the capital definitions used by federal regulators have been broadened to include certain types of debt claims as well as (pure) ownership equity. Currently, the Office of the Comptroller of the Currency, the Federal Deposit Insurance Corporation, and the Federal Reserve recognize three components of total bank capital: (1) equity capital, (2) primary capital which includes equity capital, and (3) secondary capital. The precise accounting treatments are complex for each component but for most banks (non money-centers and without foreign subsidiaries) the following summary is sufficiently accurate:

Equity Capital: Book Value of common and perpetual preferred stock + Retained Earnings and Capital Reserves.

Primary Capital: Equity Capital + Reserve for loan and lease losses − Intangible Assets (goodwill).

Secondary Capital: Limited life preferred stock + Subordinated notes and debentures.

Total Capital: Primary Capital + Secondary Capital

Current capital adequacy guidelines are based on the ratios of primary and secondary capital to adjusted total assets. Adjusted total assets equals average total assets less intangible assets plus reserve for loan and lease losses. The basic minimum federal standards are 5.5 percent for primary capital and 6 percent for total capital. Historically, the basic standards have been adjusted for size, with higher capital requirements for small banks.[7] These guidelines can also vary in individual situations according to regulatory agency and a bank's overall condition. The important point is that the basic system (in concept) uses fixed accounting-derived ratios which apply uniformly.

Growth Potential with Fixed Capital Ratios

Assume each year a bank pays out in dividends, D_t, a constant proportion p of reported net income, NI, and that reported net income grows each year at a constant rate g. Then yearly additions to book equity ΔE are constant at:

$$(1) \quad \Delta E = NI_{t-} - D_t = (1 - p)NI_t.$$

Rearranging (1), the internal growth rate in book equity, E, becomes,

$$(2) \quad g_e = \Delta E/E_{(t-1)} = (1 - p)NI_t/E_{(t-1)} = (1 - p)ROE,$$

where ROE is reported return on equity. As an accounting identity, ROE can be written:

$$(3) \quad ROE \equiv (NI_t/TA_{(t-1)}) \cdot (TA_{(t-1)}/E_{(t-1)}) = ROA \cdot EM,$$

where ROA is reported return on assets and EM is the equity multiplier which is the reciprocal of the proportion of equity to total assets in the bank's capital structure. Combining (2) with (3), the internal growth in owners' equity is a function of return on assets, the equity multiplier and the payout rate:

$$(4) \quad g_e = (1 - p)ROA \cdot EM.$$

The growth rate in (2) is of course nothing more than the rate implicit in the familiar "Gordon growth model" for stock valuation.[8] The reason this (otherwise oversimplified) model is useful for analyzing bank capital is because, once again, bank capital ratios are computed from book not market data. The restatement of (2) as equation (4) is valid in practice (without any assumptions about the effects of financial leverage on market value) because guideline book capital ratios must be maintained more or less *continuously* regardless of the market value of the bank's shares. Assuming that a bank's desired asset portfolio is optimal and ROA is at a risk-adjusted maximum, its rate of total asset growth can only be increased by add-

ing additional external capital or by lowering dividends. Conversely, if regulators raise capital standards, the bank must raise additional external capital, cut dividends, increase ROA (which may result in a more risky asset portfolio), or "slow down."

Because bank capital ratios are inherently low compared to other businesses, small changes in capital standards can produce a dramatic impact on growth (and thus share value). Owners and bank managers have great incentive, therefore, to resist capital increases and substitute subordinated debt or other quasi-equity claims for raw equity whenever the capital definitions permit.

RECENT EVIDENCE ON ARKANSAS BANK CAPITAL

From the above analysis one can argue that bank capital always poses a managerial constraint on growth. But with uniform regulatory capital standards in effect, this constraint may or may not be binding depending on the actual economic growth opportunities available to individual banks. This possibility for Arkansas commercial banks is examined in the remainder of the paper. The method is as follows: Reported year-end 1985 capital ratios for Arkansas banks are first compared with those of (peer) banks in the Eighth Federal Reserve District (EFRD). Equation (4) is then used to estimate the limiting impact of these existing ratios on potential asset growth. Finally, the impact of possible increases in capital requirements over the current federal standards is estimated.

Arkansas and Eighth District Capital Ratios

Table 1 shows yearend 1985 average and median primary and total capital ratios for 258 Arkansas commercial banks compared to 1110 (peer group) EFRD commercial banks.[9] To control for size effects, the banks are grouped into four size categories based on asset concentration in Arkansas. The groups are structured using reported yearend 1985 total assets; each category contains one-fourth of the summed total assets within the state. The remaining banks in the EFRD are ranked in size using the class limits established for Arkansas.[10] The size categories resulting from this grouping procedure are:

	Total Assets
Size 1 Banks:	$302.6 million to $1,917.0 million
Size 2 Banks:	$113.8 million to $ 302.6 million
Size 3 Banks:	$ 52.6 million to $ 113.8 million
Size 4 Banks:	Under $ 052.6 million

Based on mean and median primary and total capital ratios, Arkansas banks report stronger capital positions than other eighth district banks. The median total capital ratio for the 258 Arkansas banks is 9.27 percent compared to 8.89 percent for the district. A similar comparison is observed for the primary capital ratios. Considering also the inter-quartile values for both primary and total capital, the ratios for Arkansas are generally higher than for peer banks in the rest of the eighth district.

As to size effects, the smaller banks throughout the district report higher capital ratios than the larger banks—an expected result given current regulatory standards. More important are the results for the two bottom size groups compared to the top two groups. The overall stronger capital position reported by the Arkansas banks appears to be largely a small bank phenomenon. Arkansas banks with total assets above the size 3 cutoff ($113.8 million) do not on average report higher capital ratios than other eighth district banks. Note, in fact, that the median total capital ratio for the size 2 banks ($113.8-302.6 million) is actually smaller for Arkansas than for the district. The ratios are strong, however, by historical standards and relative to current minimums set by federal regulators.

TABLE 1

PRIMARY AND TOTAL CAPITAL RATIOS
ARKANSAS AND EIGHTH FEDERAL RESERVE DISTRICT COMMERCIAL BANKS
YEAREND 1985

Size Groups	Arkansas Banks					Eighth Federal Reserve District Banks (Excluding Arkansas Banks)				
		Primary Capital		Total Capital			Primary Capital		Total Capital	
	N	Q3-Q1	Median	Q3-Q1	Median	N	Q3-Q1	Median	Q3-Q1	Median
Size 1	8	9.07-6.99	7.70	9.22-7.13	8.10	22	8.32-7.06	7.53	8.36-7.21	7.54
Size 2	26	9.26-7.16	8.00	9.26-7.63	8.08	86	9.30-7.39	8.33	9.53-7.39	8.38
Size 3	58	9.94-7.48	8.12	9.94-7.76	8.95	245	9.80-7.61	8.68	9.82-7.70	8.71
Size 4	166	11.31-8.22	9.56	11.31-8.32	9.66	757	10.79-7.90	9.05	10.79-7.97	9.09
ALL BANKS	258	10.71-7.83	9.15	10.70-8.01	9.27	1110	10.44-7.76	8.85	10.45-7.79	8.89

Note: Q3 and Q1 are the third and first quartile points.

Asset Growth Potential with Existing Equity Capital Ratios

Future bank growth rates are obviously unknown, but useful base-case estimates can be made using equation (4). Such estimates are shown in Table 2. Only banks with continuous and complete data for return on assets (ROA), equity multiplier (EM), and dividend payout (p) for the (post-deregulation) years 1982 through 1985 are included in Table 2. These samples are screened from the original data set formed for Table 1.[11] Using this reduced data set, the three components of equation (4) are estimated using: (1) the four-year 1982-1985 average of reported return on beginning assets, (2) the four-year 1982-1985 average dividend payout rate, and (3) the yearend 1985 equity multiplier. The estimated "maximum" annual asset growth rate for each bank is thus the rate that could be achieved without any increase in the bank's equity capital ratio (i.e., from the sale of new primary equity capital) and assuming ROA and payout are maintained at historical four-year averages. These estimated growth rates are compared to the actual average asset growth rates for each bank over the four-year sample period. Mean values for these differences are shown in the last column of Table 2. Negative values are average historical growth rates which are greater than the base-case estimates.

A cautious interpretation of the results is warranted. With large relatively homogenous bank samples, there is no reason to expect significant cross-section differences in profitability (ROA). Indeed, this is the case. Moreover, if all banks were equally adept at managing their capital positions relative to their growth potential, cross-section differences between actual and projected growth should also be negligible. The results show, however, a marginally significant difference for all Arkansas banks compared to the district. The four-year mean historical growth rate for Arkansas banks is 10.12 percent compared to an equation (4) estimated potential of 9.18 percent. The mean difference ($-.94$ percent/year) is over .7 percent greater than the district difference.

When size effects are considered, the results amplify the findings previously given in Table 1. The smaller banks (size 3 and size 4), not only have lower equity multipliers, but their estimated growth potential is closer in line to their (relatively lower) actual growth experience. The greatest disparity between estimated growth and actual growth is at the size 2 asset range ($113.8-302.6 million).[12] The reason: these banks are simply growing faster, not only relative to other segments of the Arkansas market, but relative to peer banks in the district.

Impact of Possible Increased Capital Standards

The previous results indicate, if capital is a potential constraint for Arkansas banks, it is primarily a problem for those banks in the second tier, higher-growth segment of the market. If so, these banks would be most sensitive to any regulated increase in capital requirements. Table 3 shows the results of a simulation of this prediction. Revised estimates of Equation (4) are made for each bank assuming year-end equity capital ratios are increased by one and two percent increments. All other variables remain unchanged. The table shows the percentage of banks in each size group for which estimated asset growth is less than historical growth at each capital requirement level.

Relative to other EFRD banks, the impact of even a two percent increase in equity capital ratios is minimal on size 3 and size 4 Arkansas banks. In contrast, over 90 percent of the size 2 Arkansas banks (compared to 63 percent for the district) show estimated asset growth rates less than their historical averages.

TABLE 2
ESTIMATED TOTAL ASSET GROWTH COMPARED TO 1981-1985 AVERAGE GROWTH
ARKANSAS AND EIGHTH FEDERAL RESERVE DISTRICT COMMERCIAL BANKS

	N	Average Return on Assets 1982-1985 (percent)	Average Dividend Payout Rate 1982-1985 (percent)	Equity Multiplier 1985	Annual Percent Growth in Total Assets: Estimated Maximum (percent)	Annual Percent Growth in Total Assets: Average 1981-1985 (percent)	Difference
All Banks in Sample							
Arkansas	183	1.25	28.7	11.12	9.18	10.12	−.94
8th FRD (less AR)	726	1.23	33.3	11.52	8.86	9.06	−.20
t-Statistic		(0.41)	(−2.50)**	(−1.79)**	(1.04)	(2.12)**	(−1.68)***
Size 1							
Arkansas	6	.86	28.35	13.89	8.53	9.85	−1.31
8th FRD (less AR)	7	1.08	35.70	14.17	9.49	9.54	−0.05
t-Statistic		(−1.69)	(−0.70)	(−0.18)	(−0.50)	(0.16)	(−0.91)
Size 2							
Arkansas	21	1.05	35.04	13.39	8.90	10.64	−1.74
8th FRD (less AR)	64	1.17	38.44	12.57	8.75	8.88	−0.13
t-Statistic		(−1.46)	(−0.59)	(1.36)	(0.16)	(1.68)***	(−1.38)
Size 3							
Arkansas	42	1.27	31.25	11.80	9.75	10.53	−0.77
8th FRD (less AR)	175	1.22	34.36	12.14	9.17	9.15	0.02
t-Statistic		(0.71)	(−0.84)	(−0.80)	(0.92)	(1.32)	(−0.82)
Size 4							
Arkansas	114	1.30	26.55	10.36	9.05	9.88	−0.83
8th FRD (less AR)	480	1.25	32.18	11.43	8.76	9.04	−0.29
t-Statistic		(1.00)	(−2.60)**	(−2.88)*	(0.78)	(1.26)	(−1.00)

Note: t-Statistic tests the Null Hypothesis that the Arkansas Banks and the Banks in the Eighth Federal Reserve District (less AR) have equal means.
*Significant at the .01 level.
**Significant at the .05 level.
***Significant at the .10 level.

TABLE 3
ESTIMATED IMPACT OF INCREASED CAPITAL STANDARDS ON ASSET GROWTH CAPACITY
ARKANSAS AND EIGHTH FEDERAL RESERVE DISTRICT COMMERCIAL BANKS

		Percent of Banks with Estimated Maximum Asset Growth Rates Less than their 1981-1985 Average Growth Assuming Equity Capital Ratios:		
	N	Unchanged From Yearend 1985	Increased 1% Over Yearend 1985	Increased 2% Over Yearend 1985
All Banks in Sample				
Arkansas	183	49.2	64.5	68.9
8th FRD (less AR)	726	42.3	52.9	63.1
Size 1				
Arkansas	6	66.7	83.3	83.3
8th FRD (less AR)	7	57.1	71.4	85.7
Size 2				
Arkansas	21	57.1	85.7	90.5
8th FRD (less AR)	64	45.3	56.3	62.5
Size 3				
Arkansas	42	47.6	59.5	64.2
8th FRD (less AR)	175	40.6	52.6	68.0
Size 4				
Arkansas	114	47.4	61.4	65.8
8th FRD (less AR)	480	42.3	52.3	61.0

SUMMARY AND IMPLICATIONS

Under current regulatory standards, Arkansas commercial banks, relative to peer banks in the Eighth Federal Reserve District, are generally well capitalized. While there is little reason to believe that higher capital ratios necessarily mean a lower bank failure rate, any widespread public concern over capital adequacy as related to current federal standards appears unwarranted.

From an ownership perspective, bank capital as a potential constraint on asset growth is also not a significant issue for most of the state's numerous small banks (particularly those with less than $50 million in total assets). Their capital positions are strong relative to their historical ability to grow (again using EFRD banks in the same size range as a benchmark). Though over sixty percent of the commercial banks in Arkansas have less than $50 million in total assets, it is important to remember that they represent only one-fourth of total commercial bank assets in the state.

The situation is less clear for the state's larger banks—especially should current regulatory proposals for higher capital standards be adopted. To remain competitive, owners of many higher growth banks (primarily those in the $100-300 million asset range) may be faced with a need for additional outside capital. Thus to the extent that out-of-state capital sources are required, the incentive to promote interstate banking arrangements rests primarily with the larger banks in the state.

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[1]Research assistance for this project partially funded by a grant from the Mose Sanford McCord Research Fund in Banking and Finance.

[2]Irvine H. Sprague, *Bailout: An Insider's Account of Bank Failures and Rescues*, (New York: Basic Books, 1986), p. 3. In 1984 and 1985 two-hundred commercial banks failed, more than in the entire post-WWII era. Sprague's forecast appears accurate; the number of failures in January 1986 (seventeen) was three times that of January 1985.

[3]One proposal to strengthen capital requirements, the so-called "nine-percent solution" has received much attention, most of it unfavorable—over half of all commercial banks in 1984 fell below a 9% total capital standard. See, R. Alton Gilbert, Courtenay C. Stone and Michael E. Trebing, "The New Bank Capital Adequacy Standards," *Economic Review: Federal Reserve Bank of St. Louis* (May 1985), pp. 12-20. As a more realistic alternative to uniform minimum capital standards, the Office of the Comptroller of the Currency (OCC) recently issued a proposal for a risk-based capital requirement for national banks. See, Office of the Comptroller of the Currency, "Proposed Minimum Capital Ratios: Risk-Based Capital Ratios," 12 CFR Part 3, Washington, D.C., February 19, 1986. See also, James Chessen, "Risk-Based Capital Comes to the Fore," *Regulatory Review: Federal Deposit Insurance Corporation* (January 1987), pp. 1-20.

[4]Conversely, our intent is to avoid as much as possible the chimera of public regulatory policy and rationale for capital regulation. For an extensive discussion of the regulatory view of bank capital, see Larry D. Wall, "Regulation of Banks' Equity Capital," *Economic Review: Federal Reserve Bank of Atlanta* (November 1985), pp. 4-17.

[5]That few banks are publicly traded is an obvious reason why market based measures of risk and return are not used in practice. But the issue of market based versus regulator based discipline is far more complex. Again, see Wall, "Regulation of Bank's Equity Capital," for a discussion of the regulatory view of this issue.

[6]Using portfolio theory it can be shown that the composition of a bank's asset portfolio depends not only on its level of risk aversion but on the impact of capital constraints. See, Michael Koehn and Anthony M. Santomero, "Regulation of Bank Capital and Portfolio Risk," *Journal of Finance* 35 (December 1980), pp. 1235-44. Koehn and Santomero demonstrate theoretical conditions under which a mandated increase in capital can lead to a bank's choice of riskier assets and a greater probability of bankruptcy—clearly, an unintended regulatory result.

[7]Two standard arguments for lower capital requirements for large (money-center and regional) banks are: large banks have greater flexibility in tapping sources of external capital, particularly secondary capital; and, large bank asset portfolios are more diversified and thus less risky. Empirical support for both arguments, especially the latter, is limited.

[8]The certainty value of an all equity firm with constant infinite growth discounted at a rate k is: $V_o = D_1/(k - g)$. For a full derivation, see Thomas E. Copeland and J. Fred Weston, *Financial Theory and Corporate Policy*, (Reading, Mass.: Addison-Wesley, 1979), pp. 334-336.

[9]The data are taken from FDIC Reports of Income and Condition filed by all insured banks in the district. Only banks with negative net worth or with insuffi-

cient data to accurately calculate total capital were omitted from the initial data base. The computer program to calculate capital ratios was adapted from one originally developed by R. Alton Gilbert, Courtenay C. Stone, and Michael E. Trebing, "The New Bank Capital Adequacy Standards," and supplied to us by the Federal Reserve Bank of St. Louis. We are indebted to these authors for their assistance.

[10]The concentration of total assets in the district is much greater than for the state. Thus to insure size comparability, the maximum size bank included in the non-Arkansas size 1 sample was taken at twice that of the largest bank in Arkansas.

[11]The statistical requirement for continuous data means the banks retained in the sample are "survivors." Failed banks and merged banks are excluded by the initial screen. The requirement for complete data means that observations with ratio calculations which "explode" because of missing, zero, or near-zero data are not included in the averages. The screening procedure resulted in a loss of 75 banks in Arkansas and 384 non-Arkansas eighth district banks.

[12]The screening procedure used for Table 2 excluded the two largest banks in Arkansas (bank numbers 08051190 and 08051170). Since these two banks control about a fourth of the total assets of all size 1 banks, the size 1 results might not be representative. To test this possibility, separate growth estimates were made for both banks, and a second computation of Table 2 was made. In the case of bank 08051190 which reported abnormal performance in 1985, average ROA, average growth in total assets, and payout were estimated using pre-1985 data. In the case of bank 08051170, post-merger 1984 and 1985 data were used. The results for bank 08051190 produced a difference between projected maximum growth and actual average growth of −9.9% with equity capital at the year-end 1985 level. For bank 08051170 the difference was +12.3%. Thus adding these two (extreme) opposite estimates to the original sample did not materially alter the Table 2 results. It should be apparent, however, that the findings for size 1 banks are extremely sensitive to changes in the performance of any one bank, because of the small sample size.

THE INDIVIDUAL AND THE ORGANIZATION: THEIR SEARCH FOR ACCOMMODATION

Russ Holloman
Maxwell Professor of Organizational Behavior
Augusta College

Barbara Coleman
Director of Graduate Studies
Augusta College

INTRODUCTION

The relationship between the individual and the organization began as a marriage of necessity. Although dissimilar in their economic and social heritages, each had needs which could be satisfied only by working with the other. Because their relationship is characterized more by suspicion and adversarial calculation than by trust and cooperation, the pairing is still in a process of adjustment.

In ways both obvious and not so obvious, the quality of this marriage is being tested today as never before. The convergence of two important trends—one, social and demographic; the other, economic— is forcing both parties to reexamine and make adaptive changes in their traditional views and ways of relating to each other. The social-demographic trend is reflected by increased demands of a younger, better-educated work force for more challenge and meaning in their work and for opportunities to participate in those decisions which affect them. The economic trend is characterized by declining industrial growth and productivity at the very time world-wide competition is increasing.

It is in the interest of both the individual and the organization, and of society as well, that a new understanding be reached—a new relationship be formed. Ritual proclamations of "people are our most important asset" and occasional agreements "to work harder" produce little more than a temporary "kiss and make up" type of bliss. These cosmetic activities do not alter the basic relationship; they offer, at best, a temporary distraction from the more compelling needs of the relationship.

Because organizations require the skills and contributions of many persons, they are confronted with the problem of recruiting and keeping qualified people to perform the organizations' essential tasks. Most organizations solve this problem by offering money payments to individuals in exchange for their skills and productivity. Etizoni has used the word remunerative to describe these organizations—they pay people to join and produce for them.[1] He also suggests that because there is no precise way to determine the worth of a unit of human labor, the resulting relationship between the organization and its members tends to be calculative in nature. Organizations will hire and workers will join when each feels that what is gotten is equal to or greater than what is given. Thus organizations seek to get as much work for as little money as they have to pay. Conversely, employees want as much money as they can get for as little work as is necessary. Although this relationship and the ensuing attitudes of both the employees and the organization may seem repugnant to many people, it is an inevitable aspect of the employment relationship in remunerative organizations. An unfortunate consequence of this relationship is the tendency for organizations to view wages

paid to employees as a cost of production, like all other expenses associated with the production process. And, like all other expenses, minimizing the cost of labor is one way to improve the financial success of an organization. Making this assumption and relating to employees in terms of it produces serious, unintentional consequences for both the individual and the organization.

Because of this relationship individual employees, especially at the lower levels, tend to regard themselves and their organization as being on opposite sides of a subtle, invisible, psychological wall. This division between "them" (the organization) and "us" (individual members) has contributed to and been reinforced by a frame of reference each has developed for viewing the other. Included in this frame of reference is a set of basic assumptions about *fact* (the way things are), *value* (the way things ought to be), and *possibility* (the way things could be). This frame of reference provides both the individual and the organization a meaningful guide for drawing upon past experiences to evaluate and respond to new situations. Without such a frame of reference neither would be capable of purposeful, consistent action.

THE INDIVIDUAL AND THE ORGANIZATION: THE WAY THINGS ARE

The cornerstone of the frame of reference held by both the individual and the organization is the picture each has of how thing are now. Both parties naturally feel that the present relationship is a product of rational decision making about problems growing out of that relationship. The organization sees itself continually confronted with the problem of recruiting productive employees and keeping them motivated. The organization needs and expects dependable role performance in terms of quality and quantity of work and seeks to reduce employee discretion by controlling on-the-job behavior. Persons who willingly accept this prescription of acceptable role performance have been described by Presthus as "upward-mobiles."[2] Many individuals, however, are unable or unwilling to make the upward-mobile trade-off: they adopt a pattern of accommodation that Presthus has called "indifferent" or withdrawal. Having needs and motivations which are basically incompatible with organizational expectations, "indifferents" resist these organizational pressures and fight back in a number of ways. They may, for example, form a union to protect themselves against the arbitrary decisions of management or, possibly, withdraw their commitment from the organization by doing no more work than is absolutely necessary. Their linkage to the organization can be, and often is, further weakened by increased absenteeism, turnover, and other overt and covert forms of aggressive behavior. To keep these "indifferents" in line, organizations typically resort to more pervasive external controls and punishments, resulting in more withdrawal and other defensive behaviors by their members. Thus a vicious cycle begins, a conflict that has been referred to as the "individual-versus-organization" problem.

Needs and Goals

There is, fortunately, a middle ground between the frame of reference held by individuals and that held by organizations. Both positions have some truth in them but neither is wholly accurate. Organizations do mold their members but their power to do this is not absolute. Individuals do exercise some choices as members of organizations, but there are limits to their freedom to pursue private goals while holding organizational membership. Both parties have legitimate needs and goals; and, when one set of needs is satisfied at the expense of the other, both ultimately suffer decreased needs satisfac-

tion. When the needs of both the individual and the organization are satisfied to some optimal degree, a state of fusion or accommodation results.

Katz and Kahn argue that there are certain employee behaviors required by organizations that are covered under the work contract.[3] These behaviors are normally thought of as being legal requirements which employees must meet as a condition for continued employment. Included are matters pertaining to the quantity and quality of work, time spent on the job, and compliance with reasonable work rules. But there is a second and often neglected set of behaviors not specified by role prescriptions. This second set is more innovative, spontaneous, and caring. Examples of such behaviors are more difficult to specify than are the required behaviors. Employees perform the required behaviors because they have to; the innovative, caring behaviors are performed because employees want to. Speaking well of the organization to outsiders is an example. Since they are above and beyond the basic, required behaviors, these innovative behaviors fall outside the legal work-contract. This circumstance means that in the calculative relationship these organizational growth needs often go unmet. Remunerative organizations can secure these innovative behaviors only by changing the basis of employee involvement in the organization.

In a similar manner employees are generally able to satisfy their basic needs within this exchange relationship. They seek to protect this means-satisfaction relationship through unions, seniority systems, and restrictive work practices. Individuals also seek to satisfy the most pressing of their social needs through friendship and informal group involvements. But like the organization, the employees have growth needs which are not being satisfied. The quality of life at the work place is not measured by the absence of pain that results from lack of satisfaction of a person's basic needs; it is measured more by what people do than the conditions under which they do it. When jobs satisfy only basic needs, people become apathetic toward them and tend to withdraw their commitment to the organization. Money becomes a means of satisfying their growth needs off the job, away from the organization.

Quality of Individual-Organization Linkages

Mowday, Porter, and Steers have examined the process of how individuals relate to organizations in terms of the status and the quality of their membership.[4] Membership status is determined by attendance (or absenteeism) and retention (or turnover). An individual who joins and stays in an organization, refrains from excessive absenteeism, and reports ready to work at the prescribed place and time enjoys a valued membership status in the organization. In exchange for spending the required amount of time at the work place and producing at an acceptable level in terms of quantity and quality of work, an individual must, by law, be compensated at a minimum level and be provided a safe place to work under non-discriminatory policies and decisions. Under these conditions, a person can be described as fully connected to the organization.

The quality of a person's organizational membership is further determined by a second set of factors, including loyalty, attachment, involvement, and commitment. Even though a person retains membership in an organization, it does not follow that his or her contributions to the organization in terms of performance and other organizationally facilitative actions result in high-quality membership. The quality of an employee's connection to the organization is determined by personal investments which are different from those which determine his or her status of mem-

bership. Because these investments are not directly responsive to financial incentives, organizations must take other actions to develop among employees a strong sense of psychological attachment to the organization. These necessary actions are consistent with and proceed from McGregor's Theory Y assumptions about human motivation and behavior.[5] They also parallel the innovative behaviors described by Katz and Kahn.[6]

Yankelovich and Immerwahr have used the term *discretionary effort* to emphasize the fact that the individual—not the organization—has control over these innovative behaviors.[7] By this terminology, the authors refer to the difference between what a person does contribute to his job and what he or she could contribute in terms of productivity and commitment. It is a difference over which the individual has the greater control. These authors also contend that in recent years the amount of "discretionary effort" in the work place has greatly increased, as employees increasingly give less than they are capable of giving.

Individual-Organizational Conflicts

One of the most serious consequences (or is it a determinant?) of the division between individuals and organizations is the value conflict that exists between an individual's private life and his or her organizational life. Individuals cannot live personal lives that are different and separate from their organizational lives. They cannot leave the interests, values, and attitudes which they hold in their private lives outside the factory or office. The way of life an individual knows outside the organization goes with the person to the work place. The organization can neither ignore nor violate individual expectations without contributing to the divisiveness between the organization and its members.

Another pervasive dilemma characterizing individual-organizational relationships is the impersonal means of communication and control used by organizations. Because of the number involved, face-to-face contact in formal organizations is admittedly difficult, if not impossible. As a substitute, organizations rely heavily upon rules and procedures which are designed to produce basic, required behaviors among employees. Such rules usually take on a sacrosanct quality in the eyes of the organization and, in the name of fair play, are applied universally to all employees. Because of the system of punishments used to enforce compliance, employees find it safer to comply than to try to adjust the rules to fit an extenuating situation. As a result, organizations are denied the innovative behaviors they need in order to adapt and grow. Over time, individuals become so shaped and controlled by the organization that they are unable to demonstrate creative and mature behavior even when it is desired and rewarded.

Merton examined this dimension of individual-organizational relationships and concluded that conflict between the individual and the organization is an inherent part of the system.[8] He grants that the organization does have the capacity for rational behavior and that this behavior is supported by formalized policies and regulations. The individual, in Merton's view, is less rational, more unpredictable, and always at odds with the organization. Merton is not optimistic about the chances of changing this condition and contends instead that it must be accepted and understood.

Whyte is even more resolute in his indictment of the organization for its pressures against the individual.[9] Having condemned the organization for replacing the individualistic "Protestant ethic" with the group-centered "social ethic," Whyte proceeds to argue that there is a natural conflict between the individual and the or-

ganization. This conflict has always existed and will always exist. He concludes that the individual can have no relationship with the organization other than one of conflict. The organization in Whyte's view is dangerous to the individual because of its authoritarian nature.

Is it the nature of formal organizations to dominate and control all their members? Is there no evidence of a natural predisposition on the part of individuals to cooperate and get along with others in the organization? If it is assumed that conflict is endemic to individual-organizational relationships, there are two possible courses of action. First, deliberate efforts can be taken to minimize conflict in the organization on the supposition that it is equally harmful to the individual and the organization. Second, conflict can be accepted as an inevitable aspect of organizational life on the supposition that there is no other alternative. If, however, it is assumed that conflict is not inherently a characteristic of individual-organizational relationships, then cooperation can be viewed as being as much a part of these relationships as is conflict.

THE WAY THINGS OUGHT TO BE: SATISFYING GROWTH NEEDS

It is on the basis of what individuals and organizations assume to be fact that they develop their assumptions of what is good and worthwhile. Assumptions about value become operative only in situations which involve an element of choice, but the freedom to choose a different basis of individual-organizational cooperation is always limited by what is seen as being possible.

In the remunerative model of involvement, with its calculative-adversarial pattern of accommodation, both individuals and organizations have needs which are not satisfied. People fulfill role requirements only to the minimum necessary to maintain membership in the organization. Work, for these people, is not a central interest of their life; they are a part of the organization but the organization is not a part of them. Wages received for their work are seen as a reward for the dissatisfaction they experience. Satisfaction of their growth needs is sought away from the work place. It is not surprising, then, that employees actually behave according to the assumptions of McGregor's Theory X.[10] But, in behaving this way, they are exercising a choice. "This is what the organization expects, this is what the organization will get" is their argument. Unfortunately, employees do not always understand or believe that they have and can exercise other choices.

The organization, too, has needs which go unmet in the remunerative model of employment. Because the employment process has traditionally been viewed as one of exchanging money payments and other benefits for employee contributions, the calculative attitude pervades the entire relationship between the organization and its members. Too frequently, organizational efforts to secure tne required innovative behaviors follow the same remunerative principle. "If you want them to produce more, you have to pay them more" is the organization's argument. Unfortunately, this practice is effective only in securing the required basic behaviors, and even here it has serious limitations. The innovative behaviors which the organization needs and desires can be secured only through changing the basis of involvement for its people. The required change is away from the calculative pattern to that normally found in the voluntary organization. People participate in the voluntary organizations because they want to—not because they have to. The basis of their involvement is moral—not financial. It is a moral involvement because they believe that the purpose and goals of the organization are both socially and personally beneficial. Fortunately,

this mode of involvement is not an exclusive property of the voluntary organization; it can be used by the traditionally remunerative organization.

INDIVIDUAL-ORGANIZATIONAL ACCOMMODATION: THE WAY THINGS COULD BE

Labor-management cooperation is a phrase used to describe a relationship in which the parties through joint, collaborative action attempt to reduce operating costs, improve efficiency, and in other ways promote the well-being and competitiveness of the organization. Although there have been some notable exceptions, this kind of cooperation is rare. When it has occurred, it has usually been precipitated by a crisis that threatened the economic survival of the organization and the jobs of the employees. The 1981-1982 recession is a case in point. Something had to be done to improve American industrial productivity. There was a gun at the heads of both labor and management. This gun was held by overseas nations making serious inroads into domestic markets. As Holloman has noted, "When the ox is in the ditch, labor and management will cooperate."[11] But what happens after the rescue when the economic good times return? Predictably, the cooperation stops, because neither party now sees a reason for cooperating. When cooperation is initiated under coercive, threatening conditions, the parties cooperate because they have to, not because they want to. The most important question that can be asked about this process is not whether they want to cooperate—obviously the answer is *no*—but whether they can cooperate. Do they know how to cooperate? Does cooperation serve their mutual and separate interests? It is equally obvious that the answer to these questions is *yes*. Why, then, do they choose not to cooperate in good times?

The question of whether man's basic nature predisposes him toward cooperation or competition has been debated for centuries. Long before modern science entered the debate, philosophers, theologians, and politicians had been arguing with each other over this problem. Thomas Hobbes, the English philosopher, claimed that life was naturally mean and competitive. John Locke, seeking an answer to the same question, saw man as basically cooperative. Each of these divergent positions has its champions today and the debate continues. The welter of conflicting evidence does not permit comfortable, confident generalizations.

An appealing answer to this question is that individuals and organizations do not cooperate just to cooperate. They cooperate when it is to their advantage. Unless this pragmatic, substantive reason is understood and accepted, attempts to enhance such cosmetic effects as morale and team spirit are fruitless and doomed to failure. In cooperating, each party views the other as a supply-source of needs satisfaction. Experience has shown, for example, that individuals will behave in ways which satisfy their organization most richly when they themselves are satisfied. Thus individuals acquire an interest in the overall well-being of their organization. Individuals' concern for their organization is a sort of insurance for their own satisfaction. Both individuals and organization can thus be viewed as a workhorse for each other. Because a workhorse cannot work when it is too ill-treated, both individuals and organization have a vested interest in carefully attending to each other's needs. Each party, in short, is concerned for the other's well-being and takes actions to promote it. By so doing, each can ensure being better able to provide the means for important satisfactions.

Even while cooperating to solve problems of immediate and practical concern,

both individuals and organization accept "cooperation to survive" as a marriage of necessity. Neither participates under the illusion that cooperation under conditions of economic crisis portends a fundamental change in their relationship. Still, both must be fully aware that real, long-term security against their vulnerabilities and dependencies can be realized only by moving toward a relationship of genuine cooperation that is accompanied by a wholehearted sharing of authority, power, and profits. Whether the relationship will undergo basic change, and whatever kinds of change might take place, depends upon the assumptions each makes about what is possible and desirable. The stage is admittedly set for change. For both individuals and organization, there is a freedom and knowledge of opportunity to change. Although the beliefs and practices which thwarted cooperation in the past are still present, they have been called into question by the recent instances of cooperation. They no longer have the sacrosanct quality they once had. Someone has said "Adversity is a tremendous motivator," and the truth of that statement is being affirmed today as both management and labor begin to realize that the "people problem" has to be solved.

In a feature article, *Business Week* described three basic propositions which must be incorporated into the solution to this people problem.[12] First, there must be a movement away from the traditional adversarial relationship so that bosses and workers can collaborate on concerns of mutual interest. This collaboration need not violate union contracts or undermine the role of unions as representatives of employees. A second proposition, however, calls for a reform of the bargaining process to emphasize a mutuality of interest. Thus, work-place cooperation could easily affect bargaining philosophies and practices if unions—reflecting the concerns of their members—become as concerned with the economic success of their organization as they traditionally have been in keeping up with national wage patterns and outdoing other unions. The third proposition is, in many ways, far more revolutionary and conducive to other attitudinal changes. It calls for a thorough change in organizational behavior, away from the boss-centered, hierarchical form of decision making to a system of participation. In this changed system, information is shared and decisions are made at lower levels, encouraging employees, by extension, to become involved in the process.

Proposals as far reaching as these inevitably encounter skepticism. While both individuals and organization find it politically desirable to pay lip service to these proposals, experiments in implementing them can only come about in a Theory-Y type of environment which is characterized by mutual trust and support. As difficult and improbable as they may seem, each of these propositions, in some form has been incorporated into the negotiated contract between General Motors and the United Automobile workers for the new Saturn Plant at Spring Hill, Tennessee.[13]

A CONCLUDING THOUGHT AND A FOURTH PROPOSITION

What is the optimal, ideal pattern of individual-organizational accommodation? It is not a bargained labor-management contract. It is not simply a new system of industrial relations nor is it a new style of management. Real individual-organizational accommodation cannot exist and will not exist until there has been a complete mental revolution on the part of the individuals as to their responsibilities to themselves and to their organization, and a complete mental revolution in the outlook of organizations toward themselves and toward their members. Until this great change takes place, real individual-

organizational accommodation will not exist.

Cooperation in the work-place can and does work. The costs of the present calculative, adversarial relationship dictate other choices. The path won't be smooth or straight, but the goal is worth pursuing.

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EFFECT OF THE TAX REFORM ACT

Richard A. Kluender[1]
Assistant Professor of Forest Economics
University of Arkansas, Monticello

John L. Greene
Assistant Professor of Forest Policy
University of Arkansas, Monticello

B.G. Blackmon
Professor and Head, Department of Forest Resources
University of Arkansas, Monticello

INTRODUCTION

For over forty years, income realized from the sale of qualifying standing-timber has received preferential tax treatment as a long-term capital gain. Because virtually all forest management investments are long-term in nature, this treatment has been particularly important to forest owners and has shaped forest management planning, forest investment decisions, and forest ownership patterns over the period. With passage of the 1986 Tax Reform Act (P.L. 99-514), however, the preferential treatment was eliminated. Long-term capital gains now will be taxed at the same rate as ordinary income.

Other provisions of the act lowered the tax rate structure for both corporations and individuals, and retained the limited reforestation tax credit and amortization of reforestation expenses afforded by the 1980 Reforestation Tax Incentive Act (P.L. 96-451). But at the same time, investment tax credits, accelerated depreciation of capital investments (ACRS) and income averaging were abolished, and expensing of annual forest management costs was disallowed for forest owners classified as passive investors.

The prevailing response of private forest owners to the Tax Reform Act has been deep concern over the direction it provides for long-term planning and decision-making. To better understand its consequences, researchers at the Department of Forest Resources, University of Arkansas, Monticello, have made a preliminary assessment of the effects the act can be expected to have on net timber income to forest owners and the value of forest land as an investment holding. This paper presents the findings of that assessment, calculated on both a per-acre and a statewide basis. The numerical results are followed by discussion of the financial pressures the changes embodied in the act will place on forest management, forest ownership, timber supply, and the general economy.

OBJECTIVES AND APPROACH

Other studies have analyzed the effects the act will have on the economics of privately owned even-aged timber stands. Banzhaf & Company[2] estimated that the internal rate of return to forest management investments would decrease under the act by 38 percent for stands owned by forest industry, by 46 percent for stands in small (100 acres) nonindustrial holdings, and by 44 percent for stands in large (5,000 acres) nonindustrial holdings. Milliken[3] forecast catastrophic declines in the investment value of forest land, ranging from 54 percent for stands in noncorporate forest industry holdings to 79 percent for actively managed stands held by nonindustrial owners.

The objective of this study was wider in scope: to estimate the overall impact the Tax Reform Act will have on the forestry sector of a state economy, using Arkansas as a sample state. The approach taken was to model the changes in net aggregate timber income and in mean forest land value that each of several classes of forest owners would experience under the act, assuming other aspects of the timber products market remained unchanged (*ceteris paribus*). The estimates then were summed for state totals. Because the objective mandated an aggregate approach, it was anticipated that this study would yield lower estimates of change than were found in the studies cited above. By its nature, the aggregate information, used to develop and drive such an analysis, averages out extremes. As a result, estimates obtained using an aggregate modeling approach must be considered conservative.

STUDY MODEL

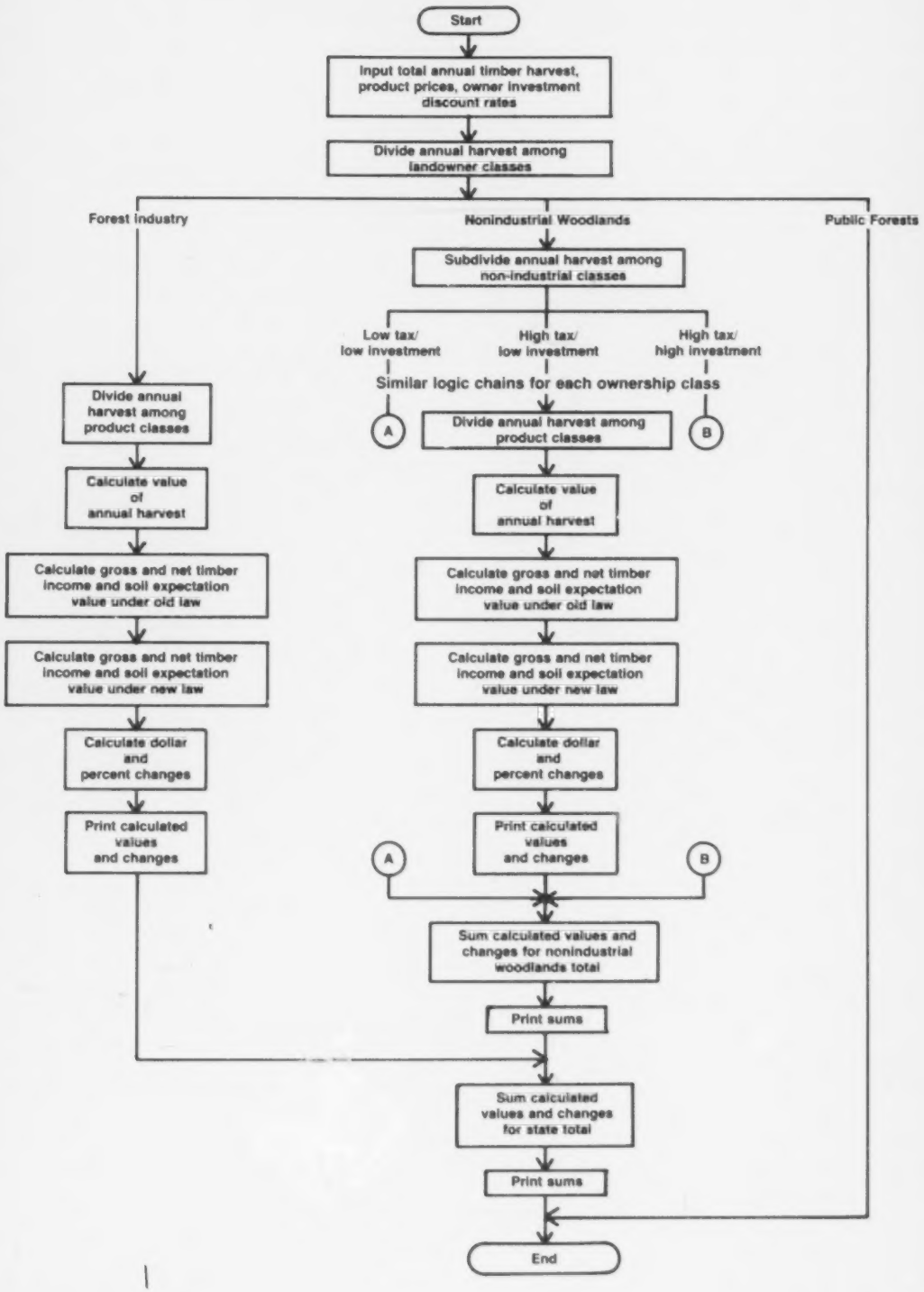
A computer model was developed to handle the many computations required for the assessment, and to make it adaptable to differing starting assumptions. A logic flowchart is presented in Figure 1. The model takes as input the volume of timber products that flows from a state's forest lands, unit product prices, and investment discount rates for the various forest ownership classes. In its first segment, the model uses factors derived from USDA Forest Service Forest Survey data[4] to apportion the timber value among ownership classes.

The model accommodates four types of timber products and five forest ownership classes. The product types—pine and hardwood pulpwood, and pine and hardwood sawtimber—are the same as were used in the Forest Survey. The ownership classes are public forests, forest industry, and three categories of nonindustrial woodlands. Since income to public forests is not subject to tax, this ownership class is not treated further in the model. Nonindustrial woodlands were divided into three categories to reflect the different income tax rates paid and different levels of forest management investments made by this diverse ownership group. Unpublished research data indicates that the classes used—owners in low tax brackets with low management investments, owners in high brackets with low investments, and owners in high brackets with high investments—each hold approximately one-third of the nonindustrial woodland acreage in Arkansas.

The second model segment calculates, for each of the four private ownership classes, the change in net timber income that can be expected to result from the Tax Reform Act and the consequent change in forest land values. The change in income is determined by calculating net annual after-tax harvest receipts to each owner class under both the old and new tax laws. Allowance is made in the tax computations for each class for the portion of gross timber income that represents recovery of investment basis.[5] For high tax/high investment individuals, who as active investors, remain eligible to expense annual forest management costs, adjustments also are made for the effect of the costs on net income and on tax. The difference between the income figures for each owner class represents the change in net timber income.

Change in forest land value is determined by dividing net timber income to each owner class under each law by the group's investment discount rate. The resulting amount is the present value of the annual income stream each class realizes from its forest land. This calculation, called soil expectation value, is the most widely accepted measure of the investment value of forest land.[6] Again, the difference between the soil expectation values for each owner class represents the change in forest land value.

FIGURE 1
FLOW CHART OF MODEL LOGIC


Start
Input total annual timber harvest, product prices, owner investment discount rates
Divide annual harvest among landowner classes
Forest Industry
Nonindustrial Woodlands
Public Forests
Subdivide annual harvest among non-industrial classes
Low tax/ low investment
High tax/ low investment
High tax/ high investment
Similar logic chains for each ownership class
Divide annual harvest among product classes
Calculate value of annual harvest
Calculate gross and net timber income and soil expectation value under old law
Calculate gross and net timber income and soil expectation value under new law
Calculate dollar and percent changes
Print calculated values and changes
A
B
Sum calculated values and changes for nonindustrial woodlands total
Print sums
Sum calculated values and changes for state total
Print sums
End

In its final segment, the model sums the calculated figures, yielding state totals for change in net timber income and change in forest land values. It produces as output printed tables by ownership class showing results on a total, per-acre, and percent change basis.

INPUT VALUES

This analysis of the effect of the Tax Reform Act was made using 1985 data, the most recent complete set of input values available for Arkansas. Timber product volume figures were taken from Arkansas Forestry Commission severance tax records. Converted to common units and combined, the volume of products totaled 542,208 thousand cubic feet.[7] Timber product prices were 12-month averages of prices reported in TimberMart-South,[8] a regional marketing bulletin. The specific prices used were: $14.42 per cord for pine pulpwood, $3.90 per cord for hardwood pulpwood, $104.39 per thousand board feet (Doyle scale) for pine sawtimber, and $65.17 per thousand board feet (Doyle scale) for hardwood sawtimber.

The discount rates used in the soil expectation value calculations were selected to reflect differences in the real long-term objectives owners in the various classes hold for their forest land. The appropriate discount rate in such calculations is the owner's minimum acceptable rate of return, MARR, for investments of similar length and risk. MARR is typically set slightly lower for nonindustrial owners than for forest industry, in acknowledgement of woodland owners' nonmarket objectives of ownership. In this analysis, an 8 percent discount rate was used for ownership classes with high forest management investments (forest industry and high tax/high investment individuals) and a 6 percent rate for classes with low investments (low tax/low investment and high tax/low investment individuals).

STUDY RESULTS

The results of the assessment are summarized in Table 1. They indicate that net timber income to private forest owners in Arkansas should decline by some 10 percent under the Tax Reform Act, or $17.6 million annually. Income losses to forest industry are estimated at 7 percent or $6.1 million annually. Combined income losses to nonindustrial woodland owners are estimated at $11.5 million per year. Individuals in the new 28 percent tax bracket are

TABLE 1
ESTIMATED LOSSES IN NET ANNUAL TIMBER INCOME AND FOREST LAND VALUES TO PRIVATE FOREST OWNERS IN ARKANSAS ATTRIBUTABLE TO THE 1986 TAX REFORM ACT

Ownership Class	Acres	Loss in Net Annual Income	Total Loss in Land Value	Land Value Loss/Acre	Pct. Loss
		x1000			
Forest Industry	4,322.6	$ 6,110.7	$ 76,383.5	$17.67	6.7%
Nonindustrial Woodlands	9,713.0	11,531.2	170,884.6	17.59	13.3%
Low Tax/Low Investment	3,237.7	2,075.2	34,586.7	10.68	7.7%
High Tax/Low Investment	3,237.7	4,343.4	72,390.7	22.36	16.6%
High Tax/High Investment	3,237.7	5,112.6	63,907.2	19.74	15.8%
State Total	14,035.6	$17,641.9	$247,268.0	$17.62	9.9%

NOTE: Loss values assume an 8% investment discount rate for the forest industry and high tax/high investment forest ownership classes, and a 6% discount rate for the low tax/low investment and high tax/low investment classes.

the hardest hit. High tax/low investment owners face annual losses of $4.3 million (17%), while high tax/high investment owners face losses of $5.1 million (16%). Low tax/low investment owners are buffered from the full effect of the tax law changes by their lower tax rate.

Since the investment value of forest land is tied to its ability to produce regular timber income, declines in income cause parallel losses in land value. The value of forest land in Arkansas should fall under the Tax Reform Act by an estimated $247.3 million, or nearly $18 per acre. Land value losses to forest industry are estimated at $76.4 million ($18/acre). Land value losses to the nonindustrial ownership classes should total $170.9 million. They range from $34.6 million ($11/acre) for low tax/low investment owners to $72.4 million ($22/acre) for high tax/low investment owners.

Examination of Table 1 reveals several apparent anomalies; similar changes in net timber income or land value between ownership classes frequently result in quite different percentage changes. This occurs because the investment value of forest land is not constant from class to class, but varies according to management intensity, discount rate, and tax status. Active management increases the value of forest land by capturing more of its productive capacity in marketable timber products. Conversely, a high investment discount rate or a high tax rate lowers land value, the first by severely discounting future returns and the second by reducing net timber income.

DISCUSSION OF RESULTS

Effects of Income Losses

The losses in net timber income forecast by the assessment mean not only an immediate reduction in timber receipts, but also, because the value of future receipts also decreases, a long-term reduction in the value of timber capital. The extent to which the different forest ownership classes are affected depends primarily on whether or not the owners actively manage their holdings.

The effect the income losses will have on active forest managers is profound, but simply stated. Forest industry and high tax/high investment individuals will find that fewer management practices appear profitable than before the Tax Reform Act and that value accrues to their timber more slowly. Financial necessity will require that these owners simplify their forest management plans, shorten rotation lengths, and seek low-cost alternatives to traditional silvicultural practices. A related point important to forest industry is that the same factors that make active forest management less attractive as an internal investment also will make forest-based firms less attractive to outside investors and lenders. The internal and external capital released by these effects probably will be invested in non-forest management alternatives.

For forest industry firms that make internal transfers of timber between woodlands and manufacturing divisions, the full effect of the 6 percent tax increase on long-term timber capital gains—from a 28 percent effective rate to 34 percent—will be offset to some extent by the 12 percent decrease in the marginal corporate tax rate—from 46 percent to 34 percent. Given the abolition of accelerated depreciation schedules and investment tax credits, few if any forest industry firms will pay less tax. But the tax-induced shift in the relative profitability of their forest and manufacturing operations will influence integrated firms to favor mill investments over forest management investments in their planning.

The effect the income losses will have on low tax/low investment and high tax/low investment individuals is more problematic. As they are defined by a low level of forest management activity, owners in

these classes cannot respond to the losses by simplifying management plans or replacing traditional practices with low-cost alternatives. Low tax/low investment owners' options are further constrained by their habit of selling timber for small products as soon as it becomes merchantable.[9] Attempts by these owners to replace lost returns by increasing the volume of timber harvested would constitute timber mining or liquidation of their productive timber capital.

The abolition of income averaging under the Tax Reform Act will affect all nonindustrial woodland owners, in that they will no longer be able to spread their tax on the pulse of income resulting from a timber harvest over several years. Loss of this provision represents an additional drain on net income for low tax/low investment owners. Under the old, sharply progressive tax rate structure, averaging large changes in income over three years resulted in a lower total tax. The new, two-tiered structure for individuals obviated this benefit for owners already in the higher tax bracket. But many low tax/low investment owners who could have retained their position in the lower bracket with income averaging will find under the act at least a portion of their timber receipts taxed at the higher marginal rate.

Many owners in the high tax/low investment class have passively profited from the natural growth of their timber into larger sizes and more valuable products, combined with preferential tax treatment for long-term timber capital gains. These owners may respond in one of two ways to the large net income losses they face with loss of preferential tax treatment. Some will be motivated to seek the advantages of higher income and greater flexibility afforded by active forest management and will move into the high tax/high investment class. Others will choose to liquidate their forest investments in favor of shorter, more stable alternatives.

Effects of Land Value Losses

As with timber income, the effects of losses in the investment value of forest land will vary with forest ownership class. Small changes in forest land value occur constantly. Soil expectation value is driven by net timber income, and the timber market is noted for its volatile nature. Pulpwood and sawtimber prices follow marked annual cycles as well as long-term trends. In addition, the price spread between timber product classes has changed several times since the early 1970s as technological advances have created new wood products and redefined raw material requirements for old ones.

Forest owners can disregard much of this constant fluctuation. Since it continues to grow in size and value, an owner can hold his timber off the market for considerable periods, waiting for acceptable prices, at relatively low economic cost. Land value losses cannot safely be ignored, however, when they are large or occur as the result of a change in long-term public policy rather than price fluctuations.

The land value losses will affect active forest managers, forest industry and high tax/high investment individuals, by making previously marginal forest land financially inoperable. That is, land that by reason of location or low productivity had previously earned only slightly more than its owner's minimum acceptable rate of return will earn less under the Tax Reform Act, thus rendering it infeasible to manage. It is reasonable to expect that forest industry and the more financially oriented high tax/high investment owners will seek to divest themselves of these sub-marginal lands. Forest industry has engaged in just such a practice over the past five years: selling outlying holdings and less productive acres as falling timber product prices have reduced their value.

The land value losses to low tax/low investment individuals are the smallest of

any ownership class, but they are substantial and should result in some land sales. It seems unlikely, however, that many of these owners have the financial and forestry expertise to quickly determine which of their acres are now submarginal. These land sales may be delayed for a period while the owners develop the answer intuitively. Conversely, the large land value losses to high tax/low investment individuals should motivate many in this class to immediately sell forest land. Lacking the ties to the land evidenced by active management, substantial numbers of these owners may elect to dispose of their forest land entirely. The result would be more land for sale than might otherwise be expected.

Effects on the Forest Resource

The simplified forest management plans, shortened rotation lengths, and low-cost alternative practices to be anticipated on even the best managed lands as a result of the Tax Reform Act will adversely affect costs and quality in every processing step, from forest to finished product. Timber products of every type will be smaller and of poorer quality at financial maturity. Harvesting and handling costs increase exponentially with decreasing timber size as does processing loss. Additionally, the younger timber will have a greater proportion of juvenile wood, which has been shown to be inferior to mature wood as a raw material for solid, composite, and paper products alike.

An attendant problem is that most low-cost alternatives to traditional silvicultural practices entail use of chemical herbicides as a substitute for mechanical treatments. While chemical registration and user licensing minimize any hazards to the environment, herbicide use remains a sensitive public relations issue for all classes of forest owners, particularly forest industry.

Apart from these effects lies the question of the position of forest land as a basic productive resource. The large number of forest acres expected to be offered for sale as a result of the Tax Reform Act presents a problem of disposition. Each of the traditional ownership classes will be attempting to sell rather than buy forest land. Even should they seek to buy land, capital insufficiency and cash flow problems resulting from recent weak markets make consolidation of large blocks of land by forest industry unlikely. And the available investment capital in the nonindustrial classes is fragmented among thousands of woodland owners. The way seems open for other groups, with other ownership objectives, to enter the landholding arena.

It is difficult, however, to identify prospective buyer groups. While rural in nature, the bulk of forest land is unsuitable for field crops. Combined with the present depressed state of the farm sector of the economy, this makes agriculture a poor candidate. Indeed, since the inception of the Conservation Reserve Program in 1986, many areas are experiencing a reversion of cropland acres to forest.[10] Property values in nonrural areas have continued to rise over time, but again, the rural nature of forest land limits its short-term potential for conversion to nonrural uses. Thus, the future status of a substantial portion of the forest resource appears to be in question.

Effects on the State Economy

Beyond its consequences for forest land and forest owners, the Tax Reform Act can be expected to reduce tax receipts to state and local governments, and diminish the level of economic activity statewide. State income tax receipts should be little affected, since the act changes net rather than gross timber income. But the losses in net income will cause proportionate decreases in spending, resulting in lower state and local sales tax revenues. The land value losses eventually will be re-

flected in lower property assessments and property tax receipts. Here, the most heavily forested counties will suffer the greatest loss.

Considerably more serious is the ripple effect that timber income losses will have in a state economy. Each dollar of timber income generates between one and two additional dollars of cash flow before out-of-state spending, savings, or federal tax remove it from circulation. Arkansas, with an income multiplier of 2.27,[11] should experience a total negative impact of over $40.0 million per year in the state economy. Because it affects forest owners to a much greater extent than other sectors of the economy, the Tax Reform Act places Arkansas and other states that rely heavily on their forest resource in a position analogous to that Louisiana, Oklahoma, and Texas have suffered due to the recent drop in oil prices. The only significant difference is that this dilemma is the result of a change in public policy instead of a vagary of the free market system.

SUMMARY

The outlook for timber production and management is not bright under the 1986 Tax Reform Act. Consequences of the act forecast by this assessment include: losses of approximately 10 percent in net timber income to private forest owners, and equivalent losses in forest land values. For Arkansas, the timber income losses are estimated at $17.6 million per year statewide, and the land value losses at $247.3 million or nearly $18 per forested acre. As anticipated, these estimates are substantially lower than those obtained in the individual stand studies, and should be considered conservative.

Losses of this magnitude represent a marked decline in the ability of timber production to compete with other types of investments. The income losses will compel active forest managers to simplify their management plans, shorten rotation lengths, and seek low-cost alternatives to traditional practices. The effect of income losses on owners who do not actively manage is more problematic. Some may be motivated to begin managing their forest holdings. Others may be induced to mine their timber or to entirely liquidate their forest investment. The land value losses will render a portion of the land held by each forest ownership class financially inoperable. Combined, these effects will result in an overall decline in the size and quality of timber products, the offering for sale of substantial acreages of forest land, and as yet undefined changes in forest ownership and use patterns.

The losses also can be expected to cause reductions in sales and property tax receipts to state and local governments. More importantly, they will cause ripple effect (multiplier) losses in a state economy of between one and two dollars for every dollar of net timber income lost. In Arkansas, the total estimated impact of the act is over $40.0 million per year. Thus, although they bear most heavily on private forest owners, the negative effects of the Tax Reform Act discussed in this paper will be felt throughout the economy.

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SELECTED ARKANSAS AND U.S. ECONOMIC INDICATORS

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SLOWER REAL GROWTH EXPECTED DURING 1988

Phillip Taylor
Director, Bureau of Business and Economic Research
University of Arkansas, Fayetteville

At this point in time, the behavior in the stock market, the decline of the dollar, the fall in interest rates, the budget deficit, and the balance of trade deficit would appear to be highly significant with respect to the future well-being of the Arkansas economy. Econometric models of the national economy have generally revised downward their projection of economic growth for the next few quarters. However, the impacts will not be uniform across all sectors of the Arkansas economy.

The decline of the dollar will improve the competitive position of Arkansas products on world markets, particularly those of the agricultural sector. This should raise commodity prices and improve the condition of farmers in eastern Arkansas. However, the dollar decline in causing higher prices for imported goods also means increased pressure toward a rise in domestic price levels. This, in turn, may result in higher costs of feed grains and, therefore, have a negative impact on the poultry industry.

Long term interest rates have declined and, given they remain at the new low levels for the next few months, housing starts should increase. In turn, this should lead to an increase in demand for the lumber industry in southern Arkansas. Similarly, lower interest rates may cause greater consumer demand for durable goods in general.

The amount of wage and salary employment in Arkansas grew during the first several months of the year. However, this performance may weaken somewhat in coming months if the poultry industry suffers from rising feed costs. The relative flat performance of Arkansas' Personal Income in the second quarter was due largely to the timing of certain U.S. government subsidy payments. Thus, it is likely that this broad measure of economic activity in the third quarter will reflect positive growth.

Any potential for a deceleration in the rate of growth in the national economy, along with a rising consumer price index, should become evident in early 1988. Much of the outlook is contingent upon the fiscal programs directed toward reduction in the Federal deficit. Limits, or cuts, in Federal spending could be a negative factor in the outlook for Arkansas.[1] At the same time, long-term interest rates may begin to climb again in the early months of the new year, particularly with expectations of higher rates of inflation. There would appear to be little reason to expect a recession for 1988 at this time, but real growth rates for the aggregate state economy may well be lower than we have enjoyed for the last several quarters.

[1]For a more detailed analysis of the economic outlook, see "An Economic Forecast for Arkansas Through 1988," by Dr. Harry French, published elsewhere in this issue of the *Review*.

LABOR FORCE AND EMPLOYMENT
ARKANSAS

(Seasonally adjusted)

Year	Month	Civilian Labor Force (Units)	Total Employment (Units)	Agricultural Employment (Units)	Manufacturing Wage and Salary Employment (Units)	Unemployment Rate (Percent)
1980		999,000	923,000	65,100	210,050	7.7
1981		1,030,000	936,000	64,100	212,100	9.1
1982		1,018,000	919,000	63,440	195,625	9.8
1983		1,026,000	920,730	62,395	199,880	10.1
1984		1,044,000	951,000	61,600	209,750	8.9
1985*		1,051,000	960,000	46,250	210,317	8.6
1986		1,066,000	973,000	45,515	214,054	8.8
	Oct.	1,075,395	975,600	44,721	215,169	9.2
	Nov.	1,089,354	986,864	44,829	214,999	9.3
	Dec.	1,092,914	996,719	44,684	215,309	8.7
1987						
	Jan.	1,086,549	1,007,637	45,518	216,547	7.9
	Feb.	1,085,953	1,000,794	45,699	215,509	8.0
	Mar.	1,079,153	988,367	45,822	214,559	8.5
	April	1,071,634	985,556	45,700	214,712	8.0
	May	1,068,949	982,657	45,335	215,092	8.1
	June	1,073,398	983,818	44,951	216,647	8.4
	July	1,078,642	990,854	44,669	218,444	8.0
	Aug.	1,085,916	994,751	44,326	219,957	8.3
	Sept.	1,095,222	1,004,401	44,019	222,694	8.1

*Note: Labor Force and Employment data for the period 1985 forward have been reestimated by the Employment Security Division. The reestimation resulted in relatively large revisions in Agricultural Employment, with revisions to a less degree in Total Employment and Civilian Labor Force data. Consequently, the data for 1985 forward are not comparable to that for the prior period.

PERSONAL INCOME

Quarterly Changes in Personal Income, Arkansas and United States

(Seasonally adjusted, Percent)

	1985 Q-IV thru 1986 Q-I	1986 Q-I thru 1986 Q-II	1986 Q-II thru 1986 Q-III	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II
Arkansas	+ 3.8	− 0.9	+ 0.8	+ 1.5	+ 2.3	− 0.1
United States	+ 1.7	+ 1.8	+ 0.8	+ 1.1	+ 1.9	+ 1.3

Personal Income in Arkansas

(Seasonally adjusted, annual rate, Millions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	16,609[R]	18,672[R]	19,477[R]	20,774[R]	23,460[R]	25,053[R]	26,230[R]	27,247[R]
Apr-Jun	16,509[R]	19,109[R]	19,808[R]	21,184[R]	22,989[R]	25,598[R]	25,999[R]	27,229
Jul-Sep	17,333[R]	19,573[R]	19,855[R]	20,922[R]	23,272[R]	24,702[R]	26,219[R]	
Oct-Dec	17,976[R]	19,325[R]	20,460[R]	21,939[R]	23,724[R]	25,258[R]	26,623[R]	
Annual	17,107[R]	19,170[R]	19,900[R]	21,205[R]	23,361[R]	24,903[R]	26,268[R]	

[R]Revised

INDUSTRIAL PRODUCTION

Quarterly Changes in Industrial Production
Arkansas and United States

(Seasonally adjusted, Percent)

	1986 Q-II thru 1986 Q-III	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III
Arkansas	+ 1.0	+ 2.3	+ 0.9	+ 1.6	+ 2.1
United States	+ 0.5	+ 0.8	+ 0.8	+ 1.0	NA

Value Added by Manufacture in Arkansas

(Seasonally adjusted, annual rate, Millions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	6,553.6	7,167.6	7,474.8	7,884.9	8,824.6[R]	9,278.8[R]	9,525.8[R]	10,074.3[R]
Apr-Jun	6,415.0	7,388.1	7,569.1	8,131.9	8,959.7[R]	9,282.1[R]	9,661.5[R]	10,238.8
Jul-Sep	6,688.3	7,601.8	7,581.8	8,398.0	9,078.2[R]	9,351.9[R]	9,758.6[R]	10,449.4
Oct-Dec	6,942.7	7,589.5	7,746.9	8,522.0	9,165.2[R]	9,425.3[R]	9,984.0[R]	
Annual	6,649.9	7,436.8	7,593.2	8,234.2	9,006.9[R]	9,334.5[R]	9,732.5[R]	

[R]Revised

CASH RECEIPTS FROM FARM MARKETINGS

Quarterly Changes in Cash Receipts, Arkansas and United States

(Seasonally adjusted, Percent)

	1985 Q-IV thru 1986 Q-I	1986 Q-I thru 1986 Q-II	1986 Q-II thru 1986 Q-III	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II
Arkansas	− 12.8	− 4.2	+ 9.8	− 8.4	− 17.1	+ 25.9
United States	− 13.0	+ 12.7	− 8.3	+ 6.5	+ 1.5	− 8.1

Cash Receipts from Farm Marketings in Arkansas

(Seasonally adjusted, annual rate, Thousands of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	3,502,043	3,000,200	3,361,304	2,694,585	3,413,896	3,304,397	2,906,663	2,321,194
Apr-Jun	2,856,150	3,707,382	3,676,795	2,619,217	3,330,093	3,372,657	2,783,431	2,921,844
Jul-Sep	3,231,322	3,741,914	2,788,726	3,052,996	3,237,918	3,078,619	3,055,931	
Oct-Dec	2,851,132	3,165,755	3,257,519	3,005,163	3,218,677	3,334,832	2,798,564	
Annual	3,110,162	3,403,813	3,271,086	2,842,990	3,300,146	3,272,626	2,886,147	

WATERBORNE COMMERCE:
McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM

Quarterly Changes in Total and Internal Tonnages

(Seasonally adjusted, Percent)

	1986 Q-I thru 1986 Q-II	1986 Q-II thru 1986 Q-III	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III
Total	− 27.1	− 10.3	+ 0.3	− 9.2	+ 37.8	− 21.3
Internal	− 32.1	− 22.7	− 9.6	+ 29.9	+ 10.6	− 24.4

Freight Traffic

(Seasonally adjusted, annual rate, Thousands of short tons)

Time Period		Traffic Tonnages			
		Inbound	Outbound	Internal	Total[1]
1979		2,026	3,456	2,932	8,926
1980		1,611	4,643	2,408	9,133
1981		1,564	5,684	1,741	9,446
1982		1,520	4,611	1,561	8,258
1983		1,918	3,905	1,904	8,017
1984		2,128	4,264	2,433	9,490
1985		2,103	3,191	2,521	8,335
1986		2,608	3,453	2,962	9,703
	Oct-Dec	2,997	2,804	2,226	8,553
1987					
	Jan-Mar	1,959	2,236	2,849	7,607
	Apr-Jun	2,115	4,615	3,151	10,480
	Jul-Sep	2,130	3,040	2,382	8,251

[1]Total tonnage includes "through traffic."

ARKANSAS CONSTRUCTION CONTRACTS

Residential Construction Contracts

(Seasonally adjusted, annual rate, Thousands of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	579,535	717,596	476,221	832,231	970,733	772,571	847,535	658,206
Apr-Jun	570,914	650,033	603,819	924,893	975,386	783,307	659,716	629,007
Jul-Sep	701,817	554,552	700,002	927,382	923,195	697,197	751,803	636,208
Oct-Dec	711,993	609,074	812,219	936,924	804,441	813,027	715,082	
Annual	641,064	632,813	648,065	905,357	918,439	766,525	743,534	

Nonresidential Construction Contracts

(Seasonally adjusted, annual rate, Thousands of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	290,960	361,233	387,041	283,678	451,825	373,672	454,492	379,376
Apr-Jun	351,905	279,976	214,046	369,556	469,331	449,010	365,787	543,582
Jul-Sep	389,946	253,467	308,093	367,211	497,074	438,687	521,350	404,611
Oct-Dec	389,628	306,559	211,527	444,594	443,742	554,682	305,847	
Annual	355,610	300,309	280,176	366,260	465,493	454,012	411,869	

ARKANSAS LABOR FORCE ESTIMATES
September 1987, Not Seasonally Adjusted

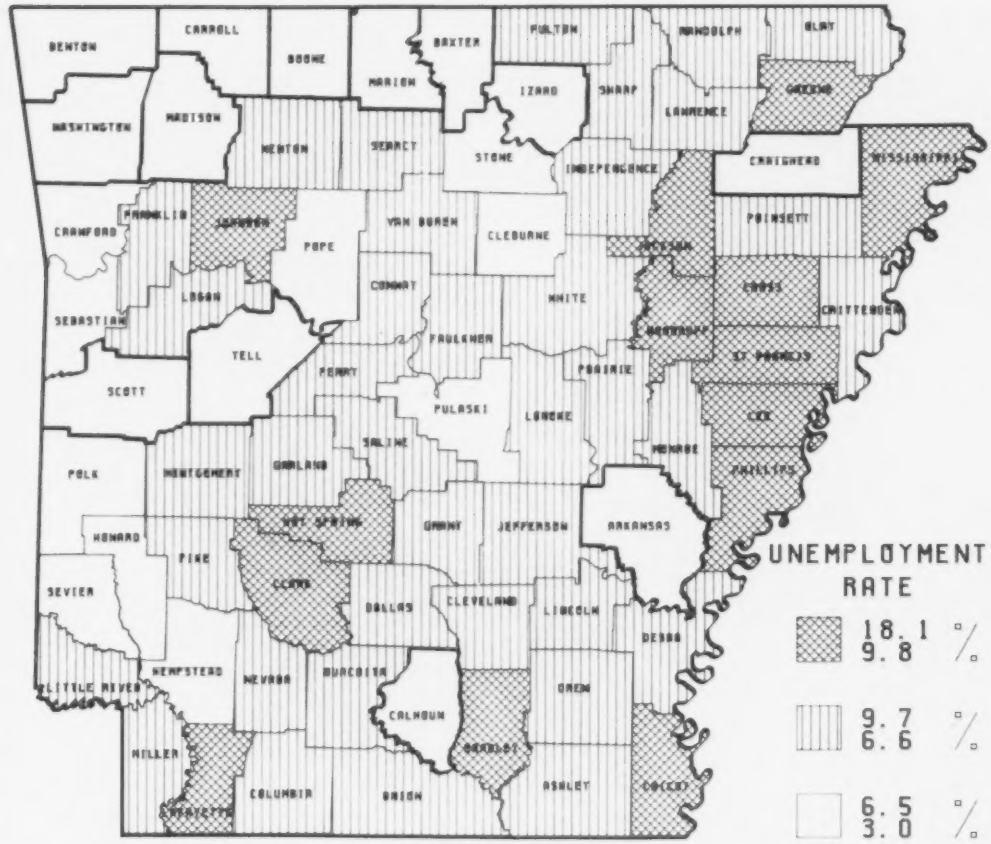
Area	Civilian Labor Force	Unemployment Rate	Total Employment
UNITED STATES	119,884,000	5.7	113,027,000
STATE OF ARKANSAS	1,113,000	7.1	1,033,700
Fayetteville-Springdale MSA	58,875	3.8	56,650
Fort Smith MSA	90,225	5.7	85,075
Little Rock-North Little Rock MSA	260,675	6.7	243,150
Pine Bluff MSA	37,150	8.1	34,125

County	Civilian Labor Force	Unemployment Rate	Total Employment	County	Civilian Labor Force	Unemployment Rate	Total Employment
Arkansas	11,550	5.0	10,975	Lee	4,650	14.5	3,975
Ashley	11,450	7.2	10,625	Lincoln	4,075	6.7	3,800
Baxter	11,575	5.2	10,975	Little River	5,425	8.3	4,975
Benton	50,325	3.8	48,425	Logan	9,525	9.7	8,600
Boone	14,525	4.0	13,950	Lonoke	16,875	6.8	15,725
Bradley	4,775	10.5	4,275	Madison	4,950	5.6	4,675
Calhoun	4,850	4.6	4,625	Marion	6,200	4.0	5,950
Carroll	11,525	3.0	11,175	Miller	17,975	7.2	16,675
Chicot	6,025	10.0	5,425	Mississippi	21,875	11.1	19,450
Clark	9,850	10.4	8,825	Monroe	5,400	9.3	4,900
Clay	8,750	8.6	8,000	Montgomery	3,050	7.4	2,825
Cleburne	8,225	6.4	7,700	Nevada	4,275	7.6	3,950
Cleveland	3,250	8.5	2,975	Newton	3,700	6.8	3,450
Columbia	12,375	6.9	11,525	Ouachita	13,675	9.1	12,425
Conway	7,775	7.4	7,200	Perry	4,125	9.1	3,750
Craighead	35,575	4.8	33,850	Phillips	10,125	12.1	8,900
Crawford	20,225	6.4	18,925	Pike	4,500	7.2	4,175
Crittenden	22,600	7.2	20,975	Poinsett	11,025	7.9	10,150
Cross	8,625	10.1	7,750	Polk	7,050	6.0	6,625
Dallas	4,425	7.3	4,100	Pope	23,625	5.8	22,250
Desha	7,375	8.1	6,775	Prairie	5,125	7.8	4,725
Drew	8,325	9.0	7,575	Pulaski	189,050	6.4	177,000
Faulkner	25,700	8.3	23,575	Randolph	7,300	7.9	6,725
Franklin	5,950	8.4	5,450	St. Francis	12,025	18.1	9,850
Fulton	3,850	7.8	3,550	Saline	29,050	7.6	26,850
Garland	31,900	8.1	29,325	Scott	6,425	4.3	6,150
Grant	5,925	8.0	5,450	Searcy	3,550	7.0	3,300
Greene	14,375	11.3	12,750	Sebastian	53,400	5.9	50,225
Hempstead	10,400	6.3	9,750	Sevier	6,500	6.5	6,075
Hot Spring	10,900	12.4	9,550	Sharp	6,000	6.7	5,600
Howard	6,125	6.1	5,750	Stone	4,025	6.2	3,775
Independence	15,625	7.7	14,425	Union	20,850	7.2	19,350
Izard	4,300	4.7	4,100	Van Buren	5,900	8.1	5,425
Jackson	8,750	11.7	7,725	Washington	58,875	3.8	56,650
Jefferson	37,150	8.1	34,125	White	25,400	9.6	22,950
Johnson	7,850	10.8	7,000	Woodruff	4,500	11.1	4,000
Lafayette	3,425	10.9	3,050	Yell	8,575	5.0	8,150
Lawrence	8,150	8.3	7,475				

Source: The Research and Statistics Section, Arkansas Employment Security Division, September 1987.

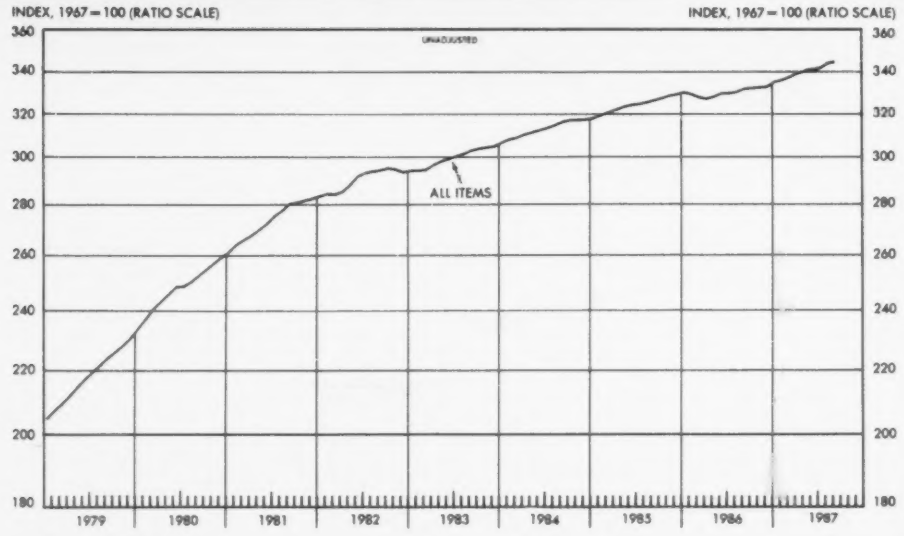
LABOR FORCE ESTIMATES
SEPTEMBER 1987

IN SEPTEMBER, ARKANSAS' CIVILIAN LABOR FORCE GREW BY 16,700 TO TOTAL 1,113,000. TOTAL EMPLOYMENT INCREASED 20,700 TO TOTAL 1,033,700. UNEMPLOYMENT DROPPED 4,000 TO TOTAL 79,300. OF THE 75 COUNTIES, CARROLL HAD THE LOWEST UNEMPLOYMENT RATE AT 3.0 PERCENT AND ST. FRANCIS, THE HIGHEST AT 18.1 PERCENT. ALSO THE UNEMPLOYMENT RATES IN 29 COUNTIES WERE BELOW THE STATE RATE OF 7.1 PERCENT. IN THE MSAS, FAYETTEVILLE - SPRINGDALE HAD THE LOWEST UNEMPLOYMENT RATE AT 3.8 PERCENT AND PINE BLUFF HAD THE HIGHEST RATE AT 8.1 PERCENT. THE RATES FOR THE FORT SMITH AND THE LITTLE ROCK - NORTH LITTLE ROCK MSAS STOOD AT 5.7 AND 6.7 PERCENT, RESPECTIVELY.



CONSUMER PRICES—ALL URBAN CONSUMERS

In September, the consumer price index for all urban consumers rose 0.2 percent, seasonally adjusted (0.5 percent not seasonally adjusted). The index was 4.3 percent above its year-earlier level.



SEE NOTE ON TABLE BELOW
SOURCE: DEPARTMENT OF LABOR

COUNCIL OF ECONOMIC ADVISERS

[1967 = 100, except as noted; monthly data seasonally adjusted, except as noted by NSA]

Period	All items [1] NSA	Food	Housing					Fuel and other utilities	Apparel and upkeep	Transportation			Medical care	Energy [2]	All items less food, energy, and shelter
			Total [1]	Shelter			Maintenance and repairs NSA			Total [1]	New cars	Motor fuel			
				Total	Renters' costs (Dec. 1982 = 100)	Homeowners' costs (Dec. 1982 = 100)									
Rel. imp. [3]	*100.0*	*16.2*	*42.9*	*27.8*	*8.0*	*19.6*	*0.2*	*7.9*	*6.3*	*17.2*	*4.6*	*2.9*	*5.4*	*7.4*	*48.6*
1979	217.4	234.5	227.6	239.7			256.4	239.3	166.6	212.0	166.0	265.6	239.7	275.9	191.5
1980	246.8	254.6	263.3	281.7			285.7	278.6	178.4	249.7	179.3	369.1	265.9	361.1	208.3
1981	272.4	274.6	293.5	314.7			314.4	319.2	186.9	280.0	190.2	410.9	294.5	410.0	228.1
1982	289.1	285.7	314.7	337.0			334.1	350.8	191.8	291.5	197.6	389.4	328.7	416.1	245.6
1983	298.4	291.7	323.1	344.8	103.0	102.5	346.3	370.3	196.5	298.4	202.6	376.4	357.3	419.3	258.4
1984	311.1	302.9	336.5	361.7	108.6	107.3	359.2	387.3	200.2	311.7	208.5	370.7	379.5	423.6	271.2
1985	322.2	309.8	349.9	382.0	115.4	113.1	368.9	393.6	206.0	319.9	215.2	373.8	403.1	426.5	281.6
1986	328.4	319.7	360.2	402.9	121.9	119.4	373.8	384.7	207.8	307.5	224.4	292.1	433.5	370.3	291.2
1986: Sept	330.2	323.9	361.8	406.7	123.1	120.6	376.2	380.6	208.9	302.2	226.4	269.0	440.6	353.7	292.8
Oct	330.5	325.2	361.9	408.3	123.6	121.1	379.0	376.7	209.0	302.5	228.0	263.4	443.0	347.1	293.9
Nov	330.8	326.5	362.0	409.3	124.1	121.3	377.1	374.9	209.6	303.6	229.7	261.7	445.3	345.3	294.8
Dec	331.1	327.2	362.7	410.3	124.5	121.5	380.0	374.3	209.5	303.6	230.9	260.9	448.2	344.6	295.5
1987: Jan	333.1	328.6	364.4	412.2	125.4	122.0	382.1	375.9	210.4	308.3	231.8	278.0	450.2	354.9	297.0
Feb	334.4	329.6	365.8	414.3	126.0	122.6	381.9	377.1	211.8	309.8	229.3	289.5	451.7	361.5	297.4
Mar	335.9	329.2	367.2	416.5	126.7	123.2	383.4	377.6	215.4	311.8	229.4	296.2	453.7	365.2	298.8
Apr	337.7	330.2	368.2	418.0	127.0	123.7	382.4	378.1	218.6	313.4	230.4	298.4	456.5	366.2	300.5
May	338.7	332.0	368.9	419.2	127.2	124.2	381.9	378.1	219.1	314.4	231.1	299.7	459.1	366.8	301.4
June	340.1	334.4	370.1	420.1	127.7	124.3	385.0	381.0	217.3	316.0	232.0	303.6	462.1	372.2	301.9
July	340.8	333.8	370.9	421.4	128.8	124.4	392.4	380.8	215.9	317.8	233.2	307.2	464.6	372.5	303.0
Aug	342.7	333.9	373.1	424.1	129.2	125.4	391.3	383.2	216.0	320.0	233.3	316.4	466.3	378.7	303.8
Sept	344.4	335.6	373.1	424.7	128.8	125.8	390.5	381.2	218.3	320.5	233.5	315.9	468.6	376.8	304.4

[1] Includes items not shown separately.
[2] Fuel oil, coal, and bottled gas; gas (piped) and electricity; and motor fuel. Motor oil, coolant, etc. also included through 1982.
[3] Relative importance, December 1986.

NOTE.—Data beginning 1983 incorporate a rental equivalence measure for homeownership costs and therefore are not strictly comparable with figures for earlier periods.
Data beginning 1987 calculated on a revised basis.

Source: Department of Labor, Bureau of Labor Statistics.

EDITOR'S NOTE: Economic Survey of the U.S. Bureau of the Census

Arkansas business establishments will be included in the 3.5 million firms across the country which, in late December, will receive a questionnaire from the U.S. Bureau of the Census. The forms, due back to the Census Bureau February 15, 1988, ask for information about business activities during 1987. Information sought includes number of employees, payrolls, value of goods or services, and inquiries specialized by kind of business.

From the responses to this questionnaire, the Census Bureau will assemble a detailed profile of the structure and functioning of the national economy—an update carried out every five years. While firms that receive census forms are required by law (Title 13, U.S. Code) to complete them, the same law requires the Census Bureau to maintain the reports of individual firms in strict confidence.

Economic census data is used extensively by federal, state, and local governments as well as by trade associations and for business publication articles. The knowledge of such data will also benefit the companies that fill out the forms—for example, industry averages, market shares, targeting new markets, and new trends.

The editor of this publication encourages recipients of these census forms to complete and return them promptly to the U.S. Bureau of the Census.

Source: Paraphrased from a U.S. Bureau of the Census release entitled, "1987 Economic Censuses Canvass 3.5 Million Businesses," October 1987.

REVIEW EDITORIAL POLICY STATEMENT

The Arkansas Business and Economic Review is dedicated to information relevant to the business and economic environment of Arkansas. Thus, the editor invites manuscripts in the following general subject areas for consideration for publication:

1. Problems and issues of the Arkansas business community and economy;
2. Regional and industrial problems that have implications for the Arkansas economic community;
3. National business and economic issues of general interest to the people of Arkansas;
4. Business and economic theory; and
5. Articles of interest to both practitioners and academics in business.

Each manuscript should be double-spaced and submitted in triplicate. The length of the article should not exceed 20 pages including tables, appendices and references. Each chart or table should be camera ready, that is, an original on a separate page. References are to be listed on a separate page at the end of the submitted article and are to be numbered sequentially in order of textual citation with a corresponding superscript at the point of reference. The listing will be used as "Endnotes" to the published article and should be in footnote format.

For example, as a minimum, each endnote item will indicate:

For a book: list (as appropriate) author's first name, middle initial, and surname; the title of the book; publication data including place, publisher, and date; and the page number(s) in the citation.

For an article in periodical: list (as appropriate) the author's first name, middle initial, and surname; title of the article; name of the periodical; volume number or month and year for the issue; and page number(s) in the citation.

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EDITORIAL AND PUBLICATION INFORMATION

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Associate Professor of Finance
University of Arkansas at Little Rock

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University Professor and Professor of Management
University of Arkansas, Fayetteville

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Professor of Management
University of Arkansas, Fayetteville

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FINANCIAL STRESS SUFFERED BY COMMERCIAL BANKS LOCATED IN AGRICULTURAL COUNTIES IN ARKANSAS

Charles R. Britton
Professor of Economics
University of Arkansas, Fayetteville

Richard K. Ford
Associate Professor of Economics
University of Arkansas at Little Rock

Charles G. Martin
Associate Professor of Finance
University of Arkansas at Little Rock

"... the financial conditions of farmers and their lenders has deteriorated rapidly since 1980 and that financial stress continues to grow."—Brian P. Crowley, Senior Associate Director, U.S. General Accounting Office before the House Committee on Banking, Finance, and Urban Affairs, September 25, 1986.

INTRODUCTION

As residents of the state of Arkansas, most of us are readily aware of the problems faced by agriculture in the rural regions. Agriculture forms much of the backbone of the economy of our state and, therefore, contributes significantly to our personal lives through its impact on legislative budgets and the ability to provide needed services. As academicians we have attempted to isolate and determine the size and importance of agriculture upon both state and national economies. This paper addresses itself to the identification and importance of the role of agriculture on commercial banks in Arkansas.

AGRICULTURAL TRENDS

It is difficult to place the current agricultural situation in perspective without reference to its historical beginnings. The authors of this paper place the origin of the problem in the post WWI period. World War I proved to be a tremendous period of expansion for U.S. agriculture with high growth rates in demand for both the domestic and the international markets.

The 1920s and 1930s were depression times for commercial agriculture. The European economies recovered, thereby providing increased production from their agriculture. This led to increased competition and, consequently, major problems for U.S. agriculture which had expanded heavily during the war using debt financing. Like similar panics in the past, those with the greatest indebtedness failed. The difference of the 1920s and 1930s was the commercialization of agriculture which had occurred since the preceding financial crisis. Major bankruptcies, farm failures, and foreclosures were exceedingly high during this period.

The value of farmland and farm assets fell even more rapidly than debt during the 1920s. The end result was that outstanding farm debt peaked in 1921 yet the ratio of debt to assets did not peak until 1933. With this background in mind, it is easy to observe the behavior of farmers with respect to debt in the post-depression period. Even World War II did not bring

about any major attitudinal changes as the debt to assets ratio in 1946 was at 8 percent compared to 30 percent in 1933. This basic conservatism allowed the farm sector to weather the post World War II recessions. However, those farmers who undertook greater debt in the 1960s had greater success than their more conservative counterparts. By 1972 the debt to asset ratio had reached 18 percent as farmers continued to finance agricultural expansion through external finance.[1]

The recent farm crisis dates to the 1972-73 period for its foundation. The major increases in commodity prices brought about expansions in debt by farm producers. Unfortunately, grain prices declined in 1976 and by 1980 commodity prices were no longer advancing thereby diminishing the agricultural sector's ability to make debt payments.[2] Bountiful harvests, combined with declining demand for U.S. agriculture occurred at the time of exceedingly high nominal interest rates. This led to problems in the agriculture sector and its supporting industries including financial institutions. Farmers began having problems meeting loan payments in the 1980s and financial institutions which service the agricultural sector began feeling the pinch.[3] Rural banks are now becoming the focus for many studies such as this one. The Federal Deposit Insurance Corp. had a post-depression record of 138 institutions fail in 1986 and has placed approximately one of every ten insured banks on a list of "troubled" institutions.[4]

All indications are that the adverse economic and financial stress facing agriculture did not abate during 1986 and may not lessen during 1987 although some hope is expected from the declining value of the dollar.[5] It seems that production increases still continue to outstrip consumption increases on a worldwide basis. Farmland values, and farm incomes continue to decline at the same time that farmers, in general, are heavily in debt.

FINANCIAL STRESS ON AGRICULTURAL LENDERS

Commercial banks have been required to report delinquencies on loans for only three years; but, during that time, the trend for delinquent farm loans has been upward. The United States Department of Agriculture (USDA) indicates that the delinquency rate is related to (a) the amount of leverage of the farm operator and (b) the extent of reliance upon export markets.[6] Obviously, much of the output of Arkansas is export-sensitive. Arkansas' agricultural future does not appear too bright since the USDA does not expect any major improvements in export conditions through this decade. Net farm incomes are expected to rise primarily through government programs designed to increase gross farm income and, even more importantly, through input cost reductions. Table 1 indicates the extent of the problem. Obviously, the financial sector is reacting to general conditions by a reduction in agricultural lending. This is true for the nation and for Arkansas. It is noteworthy that agricultural banks in Arkansas have behaved at better than the national performance levels with respect to "problem" farm loans.[7]

ECONOMIC CONDITIONS IN ARKANSAS

Arkansas, being a rural state, has seen its basic "well-being" lag behind more metropolitan states. The agricultural base of the state has suffered even further deterioration since 1979 and this also appears to be a distinct trend and not just a cyclical phenomenon. This is particularly evident with respect to unemployment. Historically, when the gap between urban and rural incomes widened, there was an outmigration from the farm communities to the urban centers.[8] In the case of Arkansas, this outmigration was from the eastern portion of the state to urban centers

TABLE 1
NON-REAL-ESTATE FARM DEBT OUTSTANDING
(in millions)

	United States	Arkansas
PCA's	$12,708	$238
% change Sept. 1984-Sept. 1986	-36.4	-49.0
% change Sept. 1985-Sept. 1986	-25.4	-32.4
Commercial Banks	$33,737	$537
% change Sept. 1984-Sept. 1986	-18.8	-14.5
% change Sept. 1985-Sept. 1986	-13.8	-3.7
Agricultural Bank Loan Performance		
Percent of Farm Loans Overdue at Agricultural Banks: Sept. 1984	2.6	1.3
Sept. 1985	3.1	1.9
Sept. 1986	3.1	1.2
Percent of Total Loans Written Off at Agricultural Banks: Sept. 1984	.68	.33
Sept. 1985	1.27	.72
Sept. 1986	1.48	.59

Source: Federal Reserve Bank of St. Louis

located in other states and not just to the cities of the state itself. This outmigration condition has been in existence for this century. Unfortunately, the durable goods industries and industrial sector are not expanding as they have in the past. This means that the low skilled rural outmigrant has been forced to seek employment in the rather low paying service industries. The net effect has been a slow down in the migration pattern and, therefore, a rise in rural unemployment rates. Bankrupt farmers tend to now stay within the same community and are forced to accept lower income employment. This tends to create fiscal problems for local and state governments. The lack of outmigration tends to keep demands high for infrastructure-like schools, hospitals, roads, etc.; yet, at the same time, the tax base is eroding through the acceptance of lower income employment. Arkansas as a state has reacted to this fiscal stress by increasing its tax efforts. According to the Advisory Commission on Intergovernmental Relations of Washington, D.C., Arkansas as a state in 1984 had a tax capacity of only 75 percent of the national average. Yet Arkansas had increased its tax effort from 1975 to 1984 by 11 percent compared to the nonrural states average increase of only 3 percent.[9] In other words the deteriorating agriculture base has created all sorts of problems for Arkansas citizens and their government. These authors want to examine the financial stress suffered by Arkansans and not the fiscal problems. The rest of this paper is directed toward this subject.

FINANCIAL STRESS OF COMMERCIAL BANKS

Nationwide the financial problems of Federal institutional lenders to the farm sector is well documented in many studies. Congress has, in fact, reacted to the situation by passing the Farm Credit Amendments Act of 1985. With respect to private lenders such as insurance companies and commercial banks, the financial stress is

just as apparent. According to the FDIC, agricultural banks accounted for 52.5 percent of all bank failures in 1985 yet they represent only 25.9 percent of all banks. Through September of 1986 agricultural banks accounted for 46.6 percent of all bank failures.[10] The agricultural banks still in existence constitute a disproportionate share of "problem" banks as identified by the FDIC and Federal Reserve System. The problem of the studies up to now has been the emphasis on "agricultural banks" as defined by the different regulatory agencies. Traditionally, an agricultural bank is defined as one having 25 percent of its total loans as agricultural loans. The authors of this study propose to use a more general definition. We analyzed commercial bank conditions based upon whether the bank is located in an agricultural area or not. The reasons for this analysis are presented in the following section.

AGRICULTURAL COUNTIES IN ARKANSAS

What is sometimes forgotten in the examination of commercial bank portfolios is that financial stress will be suffered by all the local supporting industries of agriculture. The impact of agriculture extends beyond just the markets for agricultural goods. The supporting industries, fertilizer, seed, irrigation, and farm equipment dealers, also suffer from the so-called "farm problem."[11] Even the local commercial businesses feel the stress from agriculture's decline. A commercial bank may have many loans to supporting industries and sectors yet not be classified as an agricultural bank if it does not make many loans directly to the farm sector. Still, when the farm sector suffers, so do all the supporting industries and so does that commercial bank.

With this in mind the authors sought a new and more appropriate technique to use in analysis. The classification selected is the one used by the Economic Research Service of the USDA. In the research report, *The Diverse Social and Economic Structure of Non Metropolitan America*, there is a farming-dependent classification. Farming-Dependent Counties account for 29 percent of all nonmetropolitan counties yet for only 13 percent of the nonmetropolitan population. Farming-dependent counties are, obviously, located in the North Central region with "... other smaller concentrations comprising another third, along the Mississippi River Delta in Arkansas, Mississippi, and Louisiana."[12] A description would indicate that "farming counties tend to have the following average characteristics relative to other county groups:

- Remoteness from metro areas and regional population centers
- Large population losses in the sixties followed by below-average gains in the seventies
- Uneven income distribution characterized by high average per capita incomes but low median family incomes
- Only slightly lower than average proportions of labor and proprietor income from services producing sectors
- High average proportions of people who are over 65 years old and who receive Social Security benefits or other transfer payments."[13]

As can be seen in Exhibit 1, there are 29 counties designated as farming-dependent within the state of Arkansas. As can be further seen, they are located primarily in the Ozarks of the northern part of the state and along the Arkansas and Mississippi Rivers. These 29 counties account for 38.7 percent of all Arkansas counties. The counties are enumerated in Exhibit 2.

EXHIBIT 1

ECONOMIC STRUCTURE OF ARKANSAS COUNTIES

EXHIBIT 2
ECONOMIC STRUCTURE OF ARKANSAS COUNTIES

	Non-Farming Dependent	
Farming Dependent	Urban	Other*
Arkansas	Crawford	Ashley
Carroll	Crittenden	Baxter
Chicot	Jefferson	Benton
Clay	Little River	Boone
Cross	Miller	Bradley
Desha	Pulaski	Calhoun
Franklin	Saline	Clarke
Fulton	Sebastian	Cleburne
Izard		Cleveland
Jackson		Columbia
Lafayette		Conway
Lawrence		Craighead
Lee		Dallas
Lincoln		Drew
Lonoke		Faulkner
Madison		Garland
Marion		Grant
Monroe		Green
Montgomery		Hempstead
Newton		Hot Spring
Perry		Howard
Poinsett		Independence
Prairie		Johnson
Randolph		Logan
Scott		Mississippi
Searcy		Nevada
Stone		Ouachita
Woodruff		Phillips
Yell		Pike
		Polk
		Pope
		St. Francis
		Sevier
		Sharp
		Union
		Van Buren
		Washington
		White

*Other category includes the following classifications: 1) manufacturing, 2) mining, 3) specialized government, 4) persistent poverty, 5) Federal lands, 6) retirement. It should be noted that counties may be classified as meeting the requirements for more than one category.

Source: Economic Research Service, United States Department of Agriculture, Rural Development Research Report number 49. The Diverse Social and Economic Structure of Nonmetropolitan America, Washington, D.C.

FINANCIAL STRESS OF COMMERCIAL BANKS IN FARMING-DEPENDENT COUNTIES

Since agriculture can have both direct and indirect effects upon local communities, it was felt that analysis of the financial conditions of commercial banks located in farming-dependent counties would prove more insightful than just an analysis of agricultural banks themselves. In the 29 counties there were 81 commercial banks and located in the 46 non-farming dependent counties, 166 commercial banks. The 247 total commercial banks is in reference to only those commercial banks which were in continuous operation between 1978 and 1985. The data was obtained from the call and income reports submitted by banks to the Federal Reserve System.

The ratios to be analyzed are presented in Table 2. It should be pointed out that the data are representative of the total banking population of Arkansas and do not represent just a "sample."

RESULTS AND CONCLUSIONS

Table 2 does indicate some differences between commercial banks located in farming-dependent counties and banks located in non-farming-dependent counties. As the data in Table 2A show, and as what should be expected, banks in agricultural counties have a significantly greater proportion of their loans in agricultural loans. Noteworthy is the fact that the average ratio value since 1980 is below that of the .25 required to be classified as an agricultural bank by the Federal Reserve System.

What is most noteworthy is the decline in Farm Loans/Total Loans during the 1978 to 1985 time period. Banks in farming dependent counties had a decrease of 25 percent in the ratio (from 28.82 to 21.56) while banks in non-farming counties decreased their ratio by almost 35 percent (from 14.87 to 9.68). What is obvious is that commercial banks are reacting to the agricultural crisis by emphasizing other areas of loan demand. Agricultural loans in the portfolios of all Arkansas commercial banks are diminishing in importance.

Further indications of commercial bank behavior are provided in Table 2B which provides data concerning the provision or allowance for possible loan or lease losses. The ratios are for loan losses as a percent of total loans. Once again a discernable pattern exists. Both non-farming and farming county banks have significantly increased their provisions for possible loan losses. This is particularly true for banks located in farming-dependent counties where the ratio almost doubled between 1978 and 1985 (from .82 to 1.61). The difference between the ratios of banks of farming versus non-farming counties continued to widen during the period from .05 in 1978 to .34 in 1985. It would seem that the commercial banks located in farming-dependent counties are taking a conservative approach to potential problems by increasing their allowance for loan losses. This behavior does impact on other measures of bank performance as can be seen in Tables 2C and 2D which display data concerned with net income.

As seen in Table 2C, the ratio of net income to total assets indicates that banks of non-farming counties had a slightly better performance in 1978 and 1979 than farming county banks. However, in 1980 the pattern reversed and banks in farming dependent counties significantly outperformed non-farm banks. Note that this was primarily the result of a decline in the net income/total assets ratio suffered by the banks of non-farming counties and not that of an increase for farm banks. As can be seen, the ratio drops significantly in 1984 such that the performance of banks in non-farming and farming dependent counties is once again comparable in 1984

TABLE 2
SELECTED RATIOS OF ARKANSAS COMMERCIAL BANKS LOCATED IN FARMING DEPENDENT COUNTIES OR NON-FARMING DEPENDENT COUNTIES: 1978-1985

TABLE 2A
Real Estate Loans-Secured by Farmland (Including Farm Residential and Other Improvements) Plus Loans to Finance Agricultural Production and Other Loans to Farmers/ Total Loans and Leases, Net of Unearned Income*

	Banks Located in Farming Dependent Counties	Banks Located in Non-Farming Dependent Counties	Difference
1978	28.82	14.87	13.95
1979	26.02	14.00	12.02
1980	24.90	12.99	11.91
1981	22.23	11.29	10.94
1982	21.98	10.67	11.31
1983	24.10	10.72	13.38
1984	24.36	10.35	14.01
1985	21.56	9.68	11.68

*This is the proper identification of what is normally referred to as the ratio of "Farm Loans to Total Loans"

TABLE 2B
Allowance for Loan and Lease Losses/ Total Loans and Leases, Net of Unearned Income

	Banks Located in Farming Dependent Counties	Banks Located in Non-Farming Dependent Counties	Difference
1978	.82	.77	.05
1979	.87	.82	.05
1980	.90	.83	.07
1981	.99	.90	.09
9182	1.02	.91	.11
1983	1.25	1.00	.25
1984	1.43	1.11	.32
1985	1.61	1.27	.34

TABLE 2C
Net Income/ Total Assets

	Banks Located in Farming Dependent Counties	Banks Located in Non-Farming Dependent Counties	Difference
1978	1.00	1.10	−0.10
1979	1.08	1.11	−0.03
1980	1.18	1.03	0.15
1981	1.09	0.98	0.11
1982	1.03	0.94	0.09
1983	1.06	0.90	0.16
1984	0.72	0.74	−0.02
1985	0.88	0.86	0.02

TABLE 2D
Net Income/
Total Equity Capital

	Banks Located in Farming Dependent Counties	Banks Located in Non-Farming Dependent Counties	Difference
1978	10.95	12.78	−1.83
1979	11.77	12.21	−.044
1980	12.42	11.23	1.19
1981	11.12	10.50	0.62
1982	10.64	10.15	0.49
1983	10.18	8.75	1.43
1984	4.99	5.74	−0.75
1985	7.90	8.69	−0.79

and 1985. Table 2D presents similar data since the ratios are net income in relation to total equity capital. Once again the pattern is very similar to the results observed in Table 2C. The most important consideration is that there is a definite downward pattern. Profitability is under pressure for both non-farming dependent and farming dependent banks. But, and this should be emphasized even though the banks are under profitability pressure, they have apparently reacted to the changing economic conditions by altering their portfolios (see Table 2A) such that their situation should not be classified as troubled. It would seem that bankers in Arkansas have reacted very positively in these agriculturally stressful times by making necessary adjustments. The 1986 data may prove even more revealing when it is released.

[1]Michael T. Belongia and R. Anton Gilbert, "The Farm Credit Crisis: Will It Hurt the Whole Economy?" Review: The Federal Reserve Bank of St. Louis, December 1985, pp. 5-15.

[2]Gary L. Benjamin, "The Financial Stress in Agriculture." Economic Perspectives, The Federal Reserve Bank of Chicago, November/December 1985, pp. 3-16.

[3]Michael T. Belongia, "The Farm Sector in the 1980s: Sudden Collapse on Steady Downturn." Review, The Federal Reserve Bank of St. Louis, November 1986, pp. 17-25 and Raymond E. Owens, "The Agricultural Outlook for 1986 ... Continued Financial Weakness Seen," Economic Review, The Federal Reserve Bank of Richmond, January, February 1986, pp. 29-34.

[4]"Commercial Banks Continue to Fail" and "Statement of Brian P. Crowley to House Committee on Banking, Finance, and Urban Affairs," United States General Accounting Office, Washington, D.C. 1986.

[5]Mark Drabenstoff, Mark Henry and Lynn Gibson, "The Rural Economic Policy Choice," Economic Review, The Federal Reserve Bank of Kansas City, January 1987, pp. 41-58.

[6]Highlighting the Outlook for Agriculture in 1987. The Federal Reserve Bank of St. Louis, Winter 1986/87, pp. 1-4.

[7]For further comparisons see William R. Keeton and Katherine M. Hecht "Banking Performance in Tenth District States," Economic Review, The Federal Reserve Bank of Kansas City, July/August 1986, pp. 3-22.

[8]Drabenstoff, Henry, and Gibson, p. 42.

[9]Advisory Commission on Intergovernmental Relations, Washington, D.C., reported in Drabenstoff, Henry, and Gibson, p. 45.

[10]"Bank Failures in the 1980's—Another Perspective," Banking and Finance, The Federal Reserve Bank of St. Louis, Winter 1986/87, pp. 1-4.

[11]Dirk Yandell, "Raising Hell on the Farms," The Intercollegiate Review, Fall, 1986, pp. 19-26.

[12]The Diverse Social and Economic Structure of Nonmetropolitan America, United States Department of Agriculture, Research Report Number 49, Washington, D.C., p. 3.

[13]Ibid., p. 3-4.

STRATEGY IMPLEMENTATION: SOME EFFECTS OF COMPETITION, CULTURE AND STRATEGY ON SELECTED RETAIL BANK'S PERFORMANCE

Robert D. Hay
University Professor and Professor of Management
University of Arkansas, Fayetteville

Herman S. Napier
Professor of Management
University of Arkansas, Fayetteville

INTRODUCTION

While a number of studies have examined the impact of single variables on organizational performance, few have attempted to study the effects of combinations of variables, even though this may be more representative of real life situations. The study described here proposes to evaluate the effect of both single variables and a combination or configuration of variables as they impact on the performance of a number of retail banks in Arkansas.

During the past five years, three topics of interest have increasingly occupied business management: 1) the rise of the importance of strategy implementation (as opposed to strategy formulation); 2) the rise of culture as a variable in implementing strategy; and 3) the impact of competition upon strategy implementation (as well as strategy formulation). *Fortune* magazine, for example, has documented these factors in a number of issues. Appendix 1 contains a listing of general references.

Retail banking in the United States has also felt the impact of these three forces. Prior to 1980, banks were largely protected from competition by regulations that created high barriers to entry, federally imposed price controls on interest, enforced specialization, narrow product-market matches, and severely restricted geographical expansion.[1]

A combination of economic, social, and political forces led to the passage of the Depository Institutions and Monetary Act of 1980. This omnibus legislation encouraged competition among banks and other financial institutions. As a result, banks had to devise new service strategies, such as: 1) eliminating interest rate ceilings for deposits; 2) permitting interest payments on demand deposits; 3) authorizing credit card operations; 4) liberalizing the use of electronic funds transfers; and 5) others which appealed to a select group of customers. In summary, banks had to change their basic service-market mix to compete effectively.[2]

Banks have been confronted concurrently by new competition from foreign banks and "nonbanks." In addition, interstate banking has grown in recent years. New technology is increasing the efficiency of traditional banking practices while bank customers are showing an increased willingness to shop around for the best prices and services. Such external environmental factors have caused banks to reformulate their services-market match strategy, and to raise questions as to how best to implement these strategies. One of the first of these has to do with the com-

petitive situation which modern retail banks must face.

What effect would the competitive situation facing a bank have upon the bank's ability to implement its service-market match? Common sense would suggest that the more competition a bank faces, the more difficult it would be to implement its strategy. The less intense the competition, the easier it would be to implement its strategy, other factors remaining equal.

Another factor to consider in implementing a strategy is the internal organizational culture. Culture comes about when members of an organization, the managers and employees, deal with common problems, tasks, and objectives and in so doing try various solutions, some of which become firmly established and are transmitted to successive generations as the internal organizational culture. It is sometimes referred to as the glue which holds the organization together because it provides the organizational members with road maps with which to understand and to influence employee and managerial behavior. Culture provides a social justification for what people are doing, for example, when providing better customer services for the bank's target market. What effect would the internal organizational culture have upon implementing a bank's strategy?

It would seem logical to suggest that a bank facing a high degree of competition would have a different type of organizational culture to implement a strategy than if there were a low degree of competition.

Another factor would be the strategy itself. If a strategy were rather dynamic (adaptive within a general framework), it could be that a different internal organizational culture would exist and a different competitive situation would exist in order to implement the strategy. If a strategy were static (constant or little subject to change), such a factor would suggest a still different culture and competitive environment to carry out a strategy.

As with the other factors, some measure of outcome or success is also necessary. In a sense, this raises still another question. Are there generally accepted measures for a bank to determine the effectiveness of whether a bank is providing its best services to its contributors (e.g., customers, employees, depositors, owners)? One of the most common such measures is Return on Assets.

CULTURE, COMPETITION, AND STRATEGY: A STUDY OF RELATIONSHIPS

In light of these factors and forces, it was decided to conduct a study to explore the effect that the external environmental factors, the internal organizational culture factors, and the strategy itself may have upon strategy implementation or outcome.

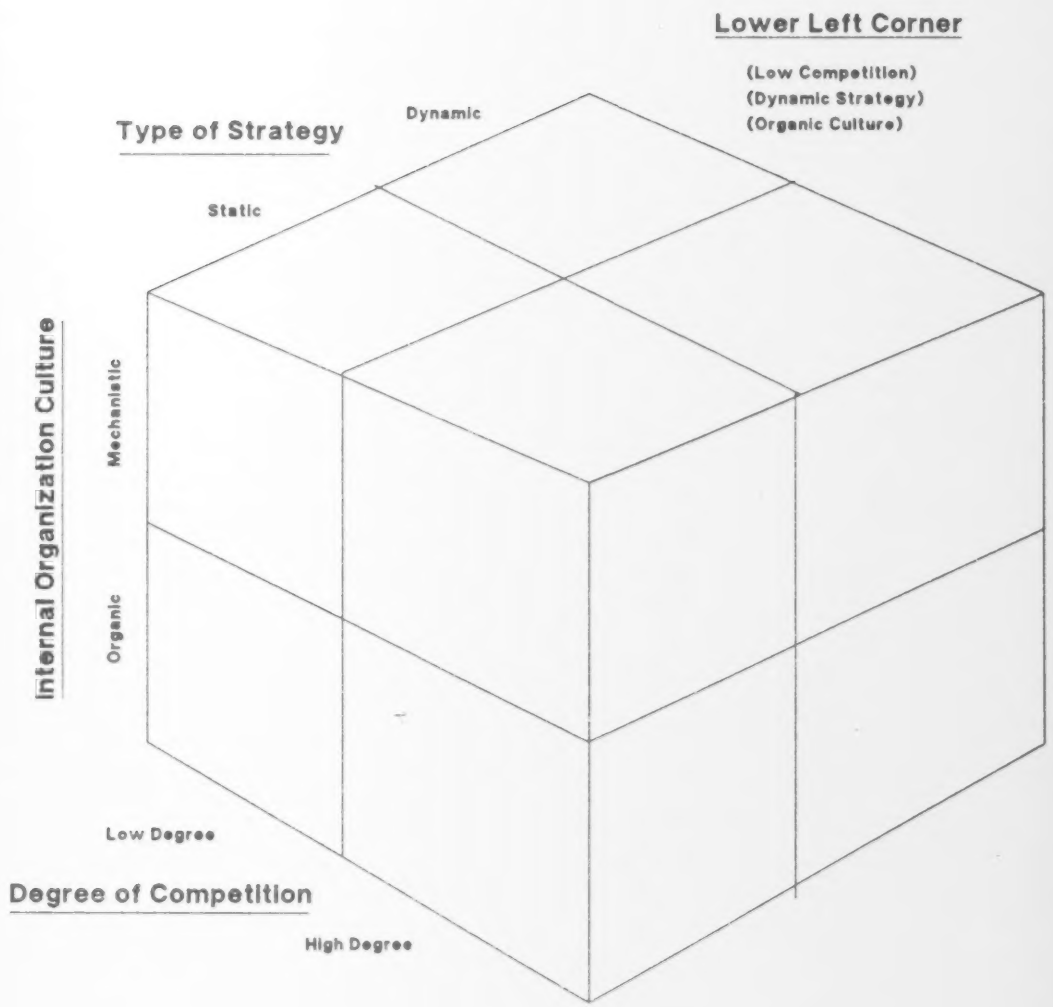
The research design used could be considered a contingency approach with three variables arranged in a three dimensional matrix as shown in Figure 1.

These eight cells may be viewed as general hypotheses subject to further investigation.

Discussion of Variables: Culture, Competition, and Characteristics

Culture is a rather fuzzy concept because it is difficult to define and far from easy to measure. While the general concept has been the subject of research by anthropologists, sociologists, psychologists, and others for a number of years, Sargent and Williamson may have best explained some of this difficulty. They observed that "culture is much like the air we breathe—so close, so natural, so much a part of us that we take it for granted and fail to notice its influence."[3] Even though it is intangible, and especially complex when studied in an organizational context it can still be seen, heard, and felt by the

FIGURE 1
GENERAL FRAMEWORK: THREE STRATEGY VARIABLES



managers and employees who deal with strategy implementation. A system of shared values is a common theme, but how can these be quantitatively measured? What are the behavior patterns of employees and managers which reflect these shared values?

The contents of culture are the behaviors, the activities, the "way we do things around here" which reflect the CEO's values and the internal organizational values. The media by which these values are transmitted are the special jargon, stories, heroes, symbols, rituals, and role models. The contents may be transmitted by planning systems, information systems, political systems, task systems, human resource systems, and others.

Internal organization cultures may be classified in a variety of ways. One generally accepted method is to classify internal organizational cultures as organic or mechanistic or a mixed organic-mechanistic type. One of the types which Burns and Stalker described is known as mechanistic and is traditional culture based on organizational variables advocated by Frederick Taylor, Henri Fayol, and Max Weber, among others.[4]

Research by some social psychologists has suggested that the mechanistic culture had dehumanizing and dysfunctional consequences. As a result a set of cultural factors was suggested which were more organic in nature.

Burns and Stalker and Porter, Lawler, and Hackman found that mechanistic cultures were effective when technologies were not rapidly changing, and where environments were not dynamic and complex.[5] Both types of cultures—mechanistic and organic—seem to be effective in implementing strategies, depending on various factors. But what are these factors which determine which type of internal organizational culture is most compatible with strategic implementation?

A search of the literature resulted in thirty-one such internal organization factors and forces which may be associated with either organic or mechanistic cultures. An unpublished pilot study by Hay, one of the authors, used all thirty-one to measure the internal culture. Through collective judgment and some limited use of statistical techniques, the factors were narrowed down to nine as follows:

Mechanistic Culture	Organic Culture
1. Simple, routine tasks	1. Complex, non-routine tasks
2. Communications flow vertical	2. Communications flow both horizontal and vertical
3. Rare departmental career movements	3. Frequent career movements between departments
4. Non-participative leadership style	4. Participative leadership style
5. Rewards based on individual performance	5. Rewards based on collective performance
6. People's opinions ignored	6. People's opinions highly valued
7. Weak commitment to each other	7. Strong commitment to one another
8. Low degree of political bargaining	8. High degree of political bargaining
9. Services well established	9. Services new and developing

It should be pointed out that these factors are associated with banks. For other types of organizations there may be a different set of factors. (Another study may be necessary to uncover those associated with different organizations.)

External Environmental Factors: Competition Most Crucial

In the present study an attempt was made to find out which external environmental factors had the most bearing on a bank's culture and resulting strategy. Several external environmental forces were investigated. These included economic (competition, supply of resources, demand), political, legal, technological, social, cultural, ethical, and religious factors. From the original list, it appeared that three factors may have the most impact on the banks—the degree of competition, the external source of supply of resources, and the politico-legal factors. Where a bank has little competition, ample resources, and clearly defined regulations, it would appear that problem areas could be anticipated with considerable success. The result was a tentative classification of the factors into the following:

Stable Environment	Unstable Environment
1. Bank operates in a monopolistic position	1. Fairly high degree of competition
2. Operates with a plentiful supply of reources	2. Uncertain supply of resources
3. Politico-legal factors fairly stable	3. Politico-legal factors fairly unstable

The low or high degree of competition facing a bank seemed to be the most significant factor tested at this time.

The Strategy Characteristics: Dynamic or Static

It appeared that the most fundamental strategy of a bank involved the types of services that a bank offers to its specific target market. This was labeled the service-market match or fit, that is, a bank's services must match the needs of its target customers. It was also recognized that different banks would have different services for different customers. Consequently, the banks in the study were asked to state their major service and then to relate the characteristics describing their strategy. An original list of characteristics of the service-market match included ten adjective sets, viz., stable-volitile, predictable-unpredictable, uni-faceted-multi-faceted, simple-complex, certainty of accomplishment-uncertainty, not risky-risky, friendly-hostile, passive-active, not competitive-competitive, and inflexible-flexible.

Strategies were rated by respondents on a scale of 1-7 according to the characteristics described. To simplify data collection and analysis it was decided to concentrate on two aspects of strategy and describe them with the characteristics shown below:

Static Strategy	Dynamic Strategy
Stable	Volatile
Not risky	Risky
Passive	Active
Not competitive	Competitive
Inflexible	Flexible

Performance Measure: Return on Assets

One general rule of thumb for measuring a bank's performance is to study their return on assets (ROA). That information is available in Sheshunoff's *Banks of Arkansas*, which states each bank's ROA and other measures, including items from the balance sheets and income statements.

A decision was made here to use a common productivity measure: average return on assets for a 5-year period, based on the view that a bank tries to increase its general effectiveness through the service-market match via the efforts of the bank's employees and officers. Further, the average return on assets for a five-year period would give a widely recognized measure of bank performance and could provide evidence for or against the strategy selected.

Matching of the Competitive Position, the Internal Culture, and the Strategy Characteristics

From the data available it appeared logical to search for an integrated match among the three factors and the performance measures. For example, if there were a match of a low degree of competition facing a bank, a mechanistic internal culture, and a static strategy, then a high performance measure could easily occur. On the other hand, if there were a match of a high degree of competition facing a bank, an organic internal culture, and a dynamic strategy, a relatively high performance measure could also be expected to occur.

The other matches could also result in a variety of performance outcomes; for example, a hit-or-miss outcome, a taking-a-chance outcome, a moderately successful outcome, and others.

RESEARCH METHODOLOGY: SURVEY OF CEOs OF ARKANSAS BANKS

The source of information for this study was the 258 banks in the state of Arkansas. Some of these were interviewed to develop a pilot study, and others participated in a mail survey, of whom 65 (25%) returned the completed questionnaire. Statistical tests suggested no significant difference between the sample of respondents and a random sample of non-respondents in terms of asset size. Assets ranged from a low of $3 million to a high of $958 million.

The survey form was directed to the chief executive officer of each bank who was asked to give his/her perception of the degree of competition facing the bank, the type of strategy being implemented, and the type of culture existing in the bank. The perceptions of the CEO provided data which were quantified in a modified semantic differential using a seven-point Likert type scale.

The degree of competition which the CEO was asked to perceive is shown in the following example:

The external economic environment places us in a fairly monopolistic position.						The external economic environment places us in a fairly high degree of competition.
1	2	3	4	5	6	7

If the CEO answered in position five, six, or seven, such an answer was considered a high degree of competition. If he/she answered with a one, two, or three position, such an answer was considered a low degree of competition. In addition, the CEO was asked to give the number of direct competitors facing the bank. (The correlation between the perceptions of the CEO and the number of direct competitors reported by the CEO provided a positive cross-check in the data set.)

A similar series of bipolar descriptions of the nature of the service-market match was given to the CEO after he/she had described the strategy. This series of adjectives describing the strategy was fashioned as follows:

Stable						Volatile
1	2	3	4	5	6	7
Not Risky						Risky
1	2	3	4	5	6	7
Inflexible						Flexible
1	2	3	4	5	6	7
Passive						Active
1	2	3	4	5	6	7
Not Competitive						Competitive
1	2	3	4	5	6	7

If the CEO answered in position five, six, or seven, such an answer was recorded as a dynamic strategy. If the CEO answered one, two, or three, such an answer was taken to represent a static strategy. All descriptors were assumed to be of equal weight, and the scores were added then divided by five to get an average. If the average was 4.5 or higher, the strategy was considered a dynamic one.

In similar fashion, a series of bipolar descriptions was used which measured the type of internal organizational culture of the bank—an organic or mechanistic type. The descriptors were built around the following variables:

Mechanistic Culture	Organic Culture
1. Simple, routine tasks	1. Complex, non-routine tasks
2. Communications flow vertical	2. Flow both horizontal and vertical
3. Rare departmental career movements	3. Frequent career movements between departments
4. Non-participative leadership style	4. Participative leadership style
5. Rewards based on individual performance	5. Rewards based on collective performance
6. People's opinions ignored	6. Opinions highly valued
7. Weak commitments to each other	7. Strong commitment to one another
8. Low degree of political bargaining	8. High degree of political bargaining
9. Services well established	9. Services new and developing

If the CEO answered a five, six, or seven, such an answer was considered an organic culture. The answers were added and divided by nine to get an overall average. If the average was 4.5 or higher, the culture was considered an organic one. An answer of one, two, or three suggested a mechanistic culture.

The return on assets for five years was obtained from Sheshunoff's 1985 book.[6]

RESULTS SUGGESTED SOME DIFFERENCES

For a summary of results see Figure 2 below.

The data show eight banks with a low degree of competition matched with a static strategy and implemented by a mechanistic culture. The average five-year return on assets for those eight banks was 1.00%. See Table 1 in Appendix 2. A 1.00% (or above) return on assets for banks is considered a "good" return by financial academicians consulted. As a result, this 1.00% figure was used as a cut-off for discussions relating to a "good" or "poor" performance by a bank. While a return of 1.00% or higher was considered as evidence of a reasonable fit of the competition and strategy implemented by the internal organizational culture, the actual ROAs provide a better understanding of each situation.

There were no banks in the sample with a low degree of competition matched with a static strategy implemented by an organic culture. As a result, that hypothesis was not addressed.

There were eleven banks with a high degree of competition matched with a static strategy implemented by a mechanistic culture. The average return on assets for this group of banks was .70%, considered poor. (See also Appendix 2, Table 2.)

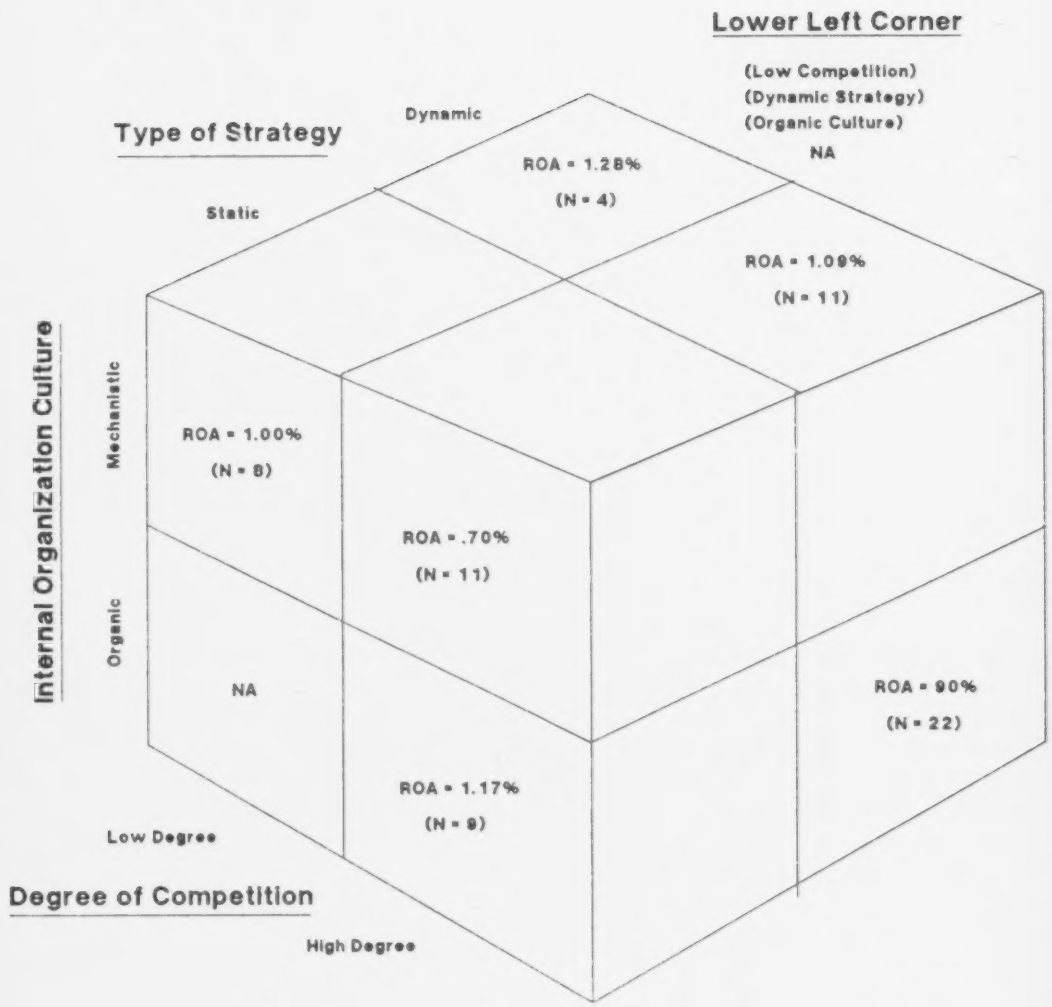
Another group of banks, numbering nine, had a high degree of competition matched with a static strategy and implemented by an organic culture. The average ROA for this group was 1.17% considered good. (See also Appendix 2, Table 3.)

There were eleven banks facing a high degree of competition matched with a dynamic strategy and implemented by a mechanistic strategy. The average ROA for this group was 1.09% considered good. (See also Appendix 2, Table 4.)

There were twenty-two banks facing a high degree of competition matched with a dynamic strategy and implemented by an organic culture. The average ROA for this group was .90%, considered poor. (See also Appendix 2, Table 5.)

Four banks faced a low degree of com-

FIGURE 2
PERFORMANCE DATA: THREE STRATEGY VARIABLES



petition matched with a dynamic strategy and implemented by a mechanistic culture. The average ROA was 1.28%, considered good. (See also Appendix 2, Table 6.)

Another group, a low degree of competition matched with a dynamic strategy and implemented by an organic culture, did not have any responses. Therefore, this general hypothesis was not addressed.

Using the ROA of 1.00% as a cut off point, the following summarizes the situations facing Arkansas banks in the sample:

Situation	Implementation of Bank Strategy by Different Internal Organization Cultures	
	Mechanistic Culture	Organic Culture
A. If a bank has a high degree of competition and a static strategy	ROA 0.70% poor	ROA 1.17% good
B. If a bank has a high degree of competition and a dynamic strategy	ROA 1.09% good	ROA 0.90% poor
C. If a bank has a low degree of competition and a static strategy	ROA 1.00% good	Data not available
D. If a bank has a low degree of competition and a dynamic strategy	ROA 1.28% good	Data not available

Situations A and B have the high ROAs, depending on the type of culture used to implement the strategy.

Situations C and D show good ROAs for a mechanistic culture, but no data were available to judge the organic applications.

These data were also analyzed using various correlational techniques. Little additional information resulted from these efforts. Correlations among variables were usually not significant at the .05 level. (See also Appendix 2, Table 7.)

Discussion of Findings

For the data presented here, the tendency appears to be that ROA will be higher for low competition and either static or dynamic strategy.

Data available appear to support the view that in the low competition situation a mechanistic culture can be an effective means to implement bank strategy. While no data were available to provide information on the low competition, organic culture situation, it may be argued that if good performance results from the mechanistic culture, it would be difficult to claim that only an organic culture could produce good results.

In the high competition situation, both mechanistic and organic cultures did well—and also did poorly. While it could be pointed out that the high competition, mechanistic culture group did worse (0.70 and 1.09 vs. 0.90 and 1.17) than the comparable organic culture group, this seems less than decisive evidence than might be expected.

If the number of observations is ignored, Figure 2 may be interpreted to suggest that combinations involving a dynamic strategy would result in better perform-

ance. On the other hand, when the number of observations are used to weigh the total number in each strategy category and all other variables are assumed constant, some gain is shown for the static strategy. Partial correlation techniques do not seem to add much to this interpretation, given the data available.

Competition seems to show forth as a critical variable, from whatever aspect the data are viewed, and the conclusion is probably warranted that it is the most important aspect of the problem as a whole.

If the system's view is taken that the interaction of variables results also in a synergistic or interaction effect over and above the simple effect of each variable, the various sections of the cube (see Figure 1 and Figure 2) may be argued to include this impact and that the adoption of the appropriate pattern (e.g., high competition, choose an organic culture and a static strategy) could be expected to produce an approximation of the ROA level shown. If only the simple comparisons are made, one can show that the highest ROA would result from low competition, static strategy with either type of culture. This type of comparison also suggests that a condition of low competition, dynamic strategy and mechanistic culture may provide an acceptable level of performance. The Figure 2 display shows some evidence for this view.

While the results do provide for interesting speculation, the major lesson here appears to be that performance can be generally related to the external environmental factor of competition, the type of strategy, and the internal organizational culture present to implement the strategy chosen.

Limitations of This Research

A number of limitations exist in this study: As far as the authors know, there has not been a similar study made and the findings are subject to all the unknowns in any initial research effort.

There are many other possible variables which could affect a bank or any other organization's ROA. This study was limited to just three.

The perceptions of the top managers were used for analysis and may be different from those of middle managers and bottom line employees or from the true situation.

The research instruments used are still relatively untested and are subject to more improvement.

The classification of variables employed many subjective decisions and must be open to question.

There is always the possibility of bias in the responses of those banks which did respond to the survey when compared to those which did not, although a comparison between the asset values of the banks which responded and a random sample of the population did not show a significant difference in size.

ROA may not be the best outcome measure and assuredly not the only one that could be used.

The study must be replicated to see if the results are consistent within similar organizations and among different ones.

SUMMARY AND CONCLUSIONS

An eight-cell contingency matrix was the underlying research design to examine the match among three strategic variables. Data from CEOs of 65 banks in Arkansas were gathered for the analysis.

Initial results suggest that if banks pursue the following matches between competition and the strategy, and if they implement those matches via an organic or mechanistic culture, then the return on assets will be as follows:

Situation	Degree of Competition	Type of Strategy	Organizational Culture	Return on Assets
The "Good" Matches Between the Competitive Situation and the Strategy Characteristics Implemented Via Various Cultures Are:				
A.	High	Static	Organic	High
B.	High	Dynamic	Mechanistic	High
C.	Low	Static	Mechanistic	High
D.	Low	Dynamic	Mechanistic	High
The "Poor" Matches Between the Competitive Situation and the Strategy Characteristics Implemented Via Various Cultures Are:				
E.	High	Static	Mechanistic	Low
F.	High	Dynamic	Organic	Low

The results of this study suggest that various strategic factors such as 1) the external environmental factor of competition, 2) the internal factor of the type of strategy to match the competition, and 3) the type of internal organizational culture do appear to affect some types of outcome measures in determining whether there is a good or a poor match of those strategic factors.

[1]Keeley, Michael, "The Regulation of Bank Entry," *Economic Review*, Federal Reserve Bank of San Francisco, Vol. 5, No. 13, Summer, 1985. Also see Heiman, John G., "The Realities of the Marketplace," *Journal of Retail Banking*, Vol. 1, No. 4, December 1979.

[2]Isaac, William M., "Deregulation: Some Critical Choices," Issues in Bank Regulation, Vol. 7, No. 13, Autumn 1980.

[3]Sargent, S. Stansfield and Robert C. Williamson, *Social Psychology*, New York, The Ronald Press, 1958, p. 61.

[4]Burns, T. and G. Stalker, *The Management of Innovation*, Travistock Press, London, 1961. See also Taylor, Frederick, *The Principles of Scientific Management*, New York, Harper 1913, Fayol, Henri, *The Theory of Social and Economic Organization*, edited by T. Parsons, New York, Oxford University Press, 1947.

[5]See Burns and Stalker above. Also see Porter, G., E.E. Lawler and J.R. Hackman, *Behavior in Organizations*, New York, McGraw Hill, 1975 for more detail.

[6]Sheshunoff, Banks of Arkansas 1985, Austin, Texas.

APPENDIX 1

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APPENDIX 2

TABLE 1
EIGHT BANKS WITH A STRATEGIC MATCH OF A LOW DEGREE OF COMPETITION AND A STATIC STRATEGY IMPLEMENTED BY A MECHANISTIC CULTURE

Bank No.	Assets ($ Mil)	Effectiveness Measure of an Average of Five Years Return on Assets (ROA)
118	$54	1.80
83	22	1.24
144	18	1.16
198	45	.91
22	56	.88
191	40	.86
181	50	.76
111	57	.35
Average of 8 banks		1.00

TABLE 2
ELEVEN BANKS WITH A STRATEGIC MATCH OF A HIGH DEGREE OF COMPETITION AND A STATIC STRATEGY IMPLEMENTED BY A MECHANISTIC CULTURE

Bank No.	Assets ($ Mil)	Effectiveness Measure of an Average of Five Years Return on Assets (ROA)
243	$ 47	1.35%
116	44	1.21
100	50	1.16
213	36	.95
236	11	.87
113	18	.84
179	216	.83
64	221	.46
165	68	.33
241	9	.12
89	30	– .39
Average of 11 banks		.70

TABLE 3
NINE BANKS WITH A STRATEGIC MATCH OF A HIGH DEGREE OF COMPETITION AND A STATIC STRATEGY IMPLEMENTED BY AN ORGANIC CULTURE

Bank No.	Assets ($ Mil)	Effectiveness Measure of an Average of Five Years Return on Assets (ROA)
166	$58	1.77
242	22	1.61
154	32	1.33
120	49	1.07
193	37	1.05
215	66	1.04
52	22	1.03
124	41	1.02
45	16	.61
Average of 9 banks		1.17

TABLE 4
ELEVEN BANKS WITH A STRATEGIC MATCH OF A HIGH DEGREE OF COMPETITION AND A DYNAMIC STRATEGY IMPLEMENTED BY A MECHANISTIC CULTURE

Bank No.	Assets ($ Mil)	Effectiveness Measure of an Average of Five Years Return on Assets (ROA)
55	$ 30	1.88
1	8	1.87
36	84	1.44
196	6	1.22
206	105	1.02
160	21	.98
217	177	.96
134	24	.89
216	86	.82
157	18	.66
65	140	.29
Average of 11 banks		1.09

TABLE 5
TWENTY-TWO BANKS WITH A STRATEGIC MATCH OF A HIGH DEGREE OF COMPETITION AND A DYNAMIC STRATEGY IMPLEMENTED BY AN ORGANIC CULTURE

Bank No.	Assets ($ Mil)	Effectiveness Measure of an Average of Five Years Return on Assets (ROA)
214	$ 3	2.05%
239	68	1.33
221	30	1.33
35	163	1.32
257	60	1.10
98	79	1.07
117	30	1.02
14	153	.99
220	155	.92
102	34	.90
86	74	.86
98	337	.85
141	230	.83
168	108	.79
143	958	.69
119	83	.67
103	30	.65
190B	240	.61
96	279	.55
15	56	.48
8	20	.46
66	32	.38
Average of 22 banks		.90

TABLE 6
FOUR BANKS WITH A STRATEGIC MATCH OF A LOW DEGREE OF COMPETITION AND A DYNAMIC STRATEGY IMPLEMENTED BY A MECHANISTIC CULTURE

Bank No.	Assets ($ Mil)	Effectiveness Measure of an Average of Five Years Return on Assets (ROA)
210	$107	1.81
112	55	1.63
16	72	1.36
203	82	.31
Average of 4 banks		1.28

TABLE 7
PARAMETER ESTIMATES (DEPENDENT VARIABLE – ROA)
(N = 65)

Variable	Estimate	T Value	Partial Corr.
Intercept	1.30	6.46	
High Competition	−0.20	−1.23	.02
Static Strategy	−0.12	−0.96	.02
Mechanistic Culture	−0.09	−0.69	.01

THE CHANGING SIGNIFICANCE OF INTEREST RATE CHANGES

John H. Hand
Professor of Finance
Auburn University

Charles P. Edmonds
Professor of Finance
Auburn University

INTRODUCTION

Deregulation of financial institutions has been the stimulus for many recent changes. Among the more obvious have been a proliferation of new services, restructuring of fees, diversification, and interstate rivalry. Perhaps the most noticeable has been the removal of most interest rate ceilings on deposits. Financial institutions are now permitted to pay and depositors are encouraged to seek competitive interest rates. As a consequence, the role of interest rates in the model for national economic growth has changed.

When recently asked how the economy now responds to ups and downs in interest rates, the senior economist for Morgan Stanley & Company responded: "The old rules don't apply anymore."[1] If so, why do they no longer apply and what are the new rules? That is the subject of this paper.

THE OLD RULE

In its simplest form, the "old rule" about the role of interest rates in economic activity is that falling rates stimulate growth while rising rates stifle growth. The logic behind this rule is traced to the inverse relationship between interest rates and the level of spending in the economy. Lowering rates stimulates spending while raising rates reduces spending. To the extent that this is true, movements in interest rates, either by the natural forces of supply and demand or by artificial forces such as the Federal Reserve, cause changes in the level of economic activity.

The relationship between spending and movements in interest rates can be illustrated with a simple economic model:

$$S = C + I + G$$

$$\text{Spending} = \text{Consumption} + \text{Investment} + \text{Government}$$

Investment is recognized as the most volatile and unpredictable of the elements in the model. It is constantly adjusting to changes in technology, taxes, expectations, politics, and, last but not least, interest rates.

For the investor, interest is a cost that must be taken into consideration when evaluating the profitability of a particular investment. Lowering interest rates can change a marginal investment to a profitable one and, thus, stimulate investment spending. Because of such things as multipliers and accelerators, the impact of a dollar change in investment spending will increase total spending many times.

THE NEW RULE

The "new rule" is that while changing interest rates will continue to influence investment spending, the impact will be offset, wholly or in part, by an opposite change in consumer spending. In other words, a decrease in interest rates may no longer cause an increase in total spending and an increase in rates may result in more spending.

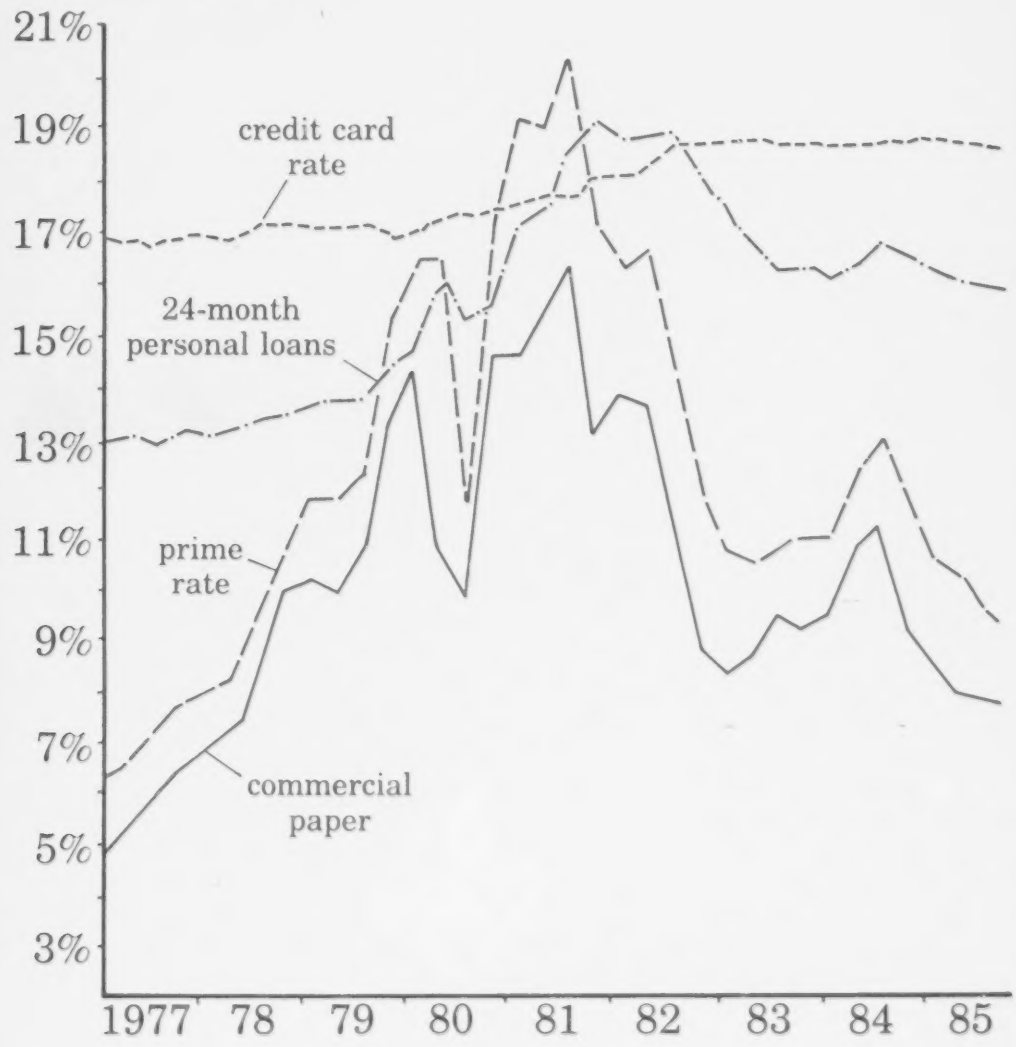
At this time two questions seem appropriate:

a. If interest has been a cost element in investment expenditures, why hasn't it been an element in consumer spending, and
b. Why do changes in interest rates *now* seem to have an opposite impact on consumer and investment spending?

The answer to question one is that interest is and has been a cost consideration for both investor and consumer expenditures. The difference is that in consumer expenditures it is a rather stable cost; but it is more variable for investors. To say that interest rates have changed means much more to the market for commercial loans than it does to the retail market for consumer loans. The cost of retail or consumer credit tends to be very sticky. In Figure 1, compare recent changes in short-term consumer loan rates with the

FiGURE 1
SELECTED INTEREST RATES PAID BY CONSUMER AND BUSINESSES, 1977-85

Source: *Federal Reserve Bulletin*



changes in the prime rate and commercial paper rate—the cost of money for investors. For consumers, a major exception to stable cost is for home mortgages.

The answer to the second question—why interest rate changes have a new and direct relationship with consumer spending—is based on three factors:

a. An understanding of the rather sticky nature of retail loan cost as discussed above,
b. An understanding of consumers' balance sheet, and
c. Deregulation of financial institutions.

When interest rates change, consumers are directly affected in two ways. The cost of loans could change and the income from credit instruments could change. The sticky nature of loan cost has already been discussed, so income is the only variable left. A review of Figure 2 will reveal that at the end of 1984 total financial assets of consumers were $6,586.7 billion, of which $1,491.3 billion was in corporate equities and $5,095.4 billion in interest-bearing assets such as time deposits, government and private bonds, and pension fund assets. Consumer liabilities were $2,169.5 billion, mostly in mortgages and installment debt. The difference between assets and liabilities, $4,417.2 billion, represents the extent to which consumers are net creditors with respect to all other sectors of the economy. If the value of the corporate equities is deducted from the difference, we find that consumers own $2,925.5 billion more interest-bearing assets than they have liabilities.

If consumers lend much more than they owe, changes in interest rates should reproduce significantly larger changes in their income than in their expenses. The impact should be more or less consumer spending, depending upon whether rates were up or down. However, this does not conform to the traditional impact that rate changes have had upon consumer spending. The reason is that consumer interest income has, much like the cost of loans, tended not to change with interest rates. Ceilings placed upon consumer type credit instruments, i.e., deposits, have been the reason. As a consequence, investment income has traditionally not fluctuated along with rate changes.

With the introduction of deregulation in the 1970s, the rather stable nature of interest income began to change and so did the role of interest rates. Consumers' large net investment in financial assets began to pay competitive rates and consumer income began to fluctuate with interest rates. Figure 3 reveals how the rate of return consumers receive on their financial assets has increased from about 6½% to about 9% in the last decade. The impact of this increase upon consumer income is illustrated in Figure 4. As a percentage of personal income, interest income increased from 8.5% in 1970 to approximately 15% in 1985. In 1984 it represented 21.4% of the increase in personal income.

The role of interest rates in consumer spending has been debated for years. For instance, what is the significance of the real rate of interest, or what is the relationship between inflation, interest rates, real net worth and consumer spending? While the impact of these variables upon consumer spending is worthy of debate, it is not the focus of this paper. The point of this paper has been to emphasize that the deregulation of consumer interest rates has added a new and significant variable to the debate.

CONCLUSION

Consumers are now receiving competitive rates on their large holdings of financial assets. The income generated is large and directly related to interest rates. Rising rates produce income that can be used to purchase consumer goods. These purchases may offset the declining expendi-

FIGURE 2
FINANCIAL ASSETS AND LIABILITIES OF CONSUMERS, YEAR-END 1984
(in billions of dollars)

Total financial assets	6586.7
Dep. + cr. mkt. instr. (1)	3294.9
Deposits	2471.0
Checkable deposits + curr.	384.8
Small time + svgs. dep.	1689.8
Money market fund shares	209.7
Large time deposits	186.7
Credit market instruments	823.8
U.S. Govt. Securities	405.3
Treasury issues	327.0
Savings bonds	74.5
Other Treasury	252.5
Agency issues	78.3
Tax-exempt obligations	212.5
Corporate and fgn. bonds	46.0
Mortgages	160.4
Open-market paper	−.4
Corporate equities	1491.3
Mutual fund shares	161.2
Other corporate equities	1330.2
Life Insurance reserves	246.0
Pension fund reserves	1436.6
Security credit	18.1
Miscellaneous assets	99.7
Total liabilities	2169.5
Credit market instruments	2094.0
Home mortgages	1308.5
Installment cons. credit	460.5
Other consumer credit	116.6
Tax-exempt debt	51.0
Other mortgages	41.4
Bank loans n.e.c.	36.5
Other loans	79.5
Security credit	34.6
Trade credit	25.8
Deferred and unpaid life insurance premiums	15.1

(1) Excludes corporate equities.

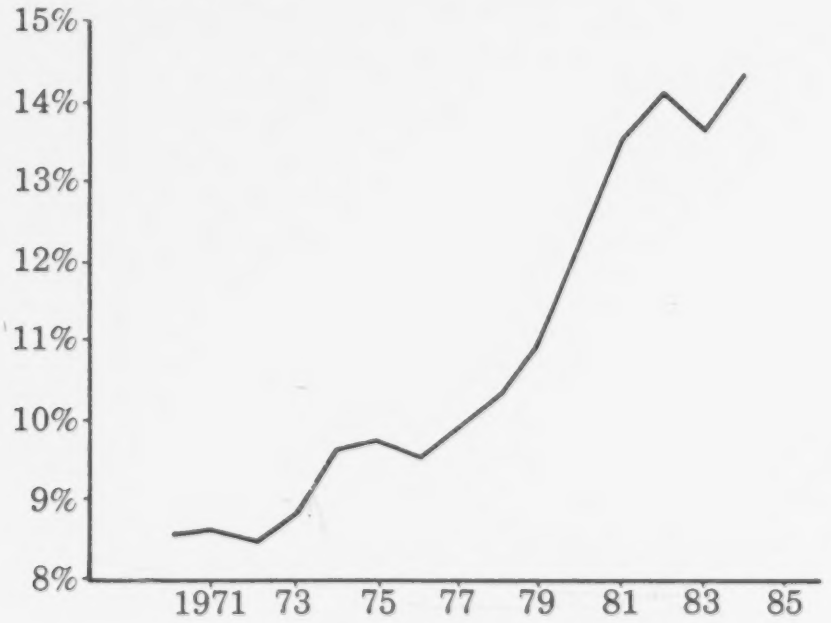
Source: Board of Governors of The Federal Reserve System. *Flow of Funds Accounts*

FIGURE 3
AVERAGE INTEREST RATE EARNED ON FINANCIAL ASSETS OF CONSUMERS, 1971-84

Source: *Survey of Current Business*; Board of Governors of the Federal Reserve System, *Flow of Funds Accounts*

FIGURE 4
INTEREST INCOME AS A PERCENTAGE OF TOTAL CONSUMER INCOME, 1970-84

Source: *Survey of Current Business*



tures that rising rates normally cause in the investment sector of the economy. The consequence is that the role of interest rates is changing.

Data reveal that the change began in the 1970s as a consequence of deregulation of interest rates. The potential economic impact is not yet known but it is almost certain to be significant. If consumers rely heavily upon interest income to meet daily consumption needs, changing interest rates will have a direct and instant impact upon economic activity.

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[1]Laurie McGinley, "The Good News: Interest Rates are Down—That's also the Bad News," *The Wall Street Journal*, Oct. 31, 1985, p. 31.

EDITOR'S NOTE: ON THE FOLLOWING ARTICLE

Professor Kazuhiko Okuda, School of Business Administration, Senshu University, Kawasaki, Kanagawa, Japan, has been a guest lecturer in the Marketing Department, College of Business Administration, University of Arkansas, Fayetteville. Professor Okuda, a Japanese Marketing Specialist, has served on the faculty of the University of Arkansas, Fayetteville, throughout the Fall Semester 1987. Earlier in 1987, he served as guest lecturer during the Summer Session in the Commerce and Administration School of Concordia University, Montreal, Canada. Professor Okuda will complete his leave from Senshu University as guest lecturer for the period January-April 1988 at the Ecole des hautes Etudes commerciales, Jouy-en-Josas, France.

Since Professor Okuda is an expert on Marketing in Japan, his views of Japanese labor, consumers, and markets may be helpful to those Arkansans who have interests in expanding existing markets or even opening new ones in Japan. Accordingly, the Bureau has obtained a copy of a speech that the professor gave before the 50th Anniversary Conference, American Marketing Association, Montreal, Canada, May 27-29, 1987. The following article is an edited version of that speech. The tabular data are believed to be of particular interest.

For a general background and analysis of the international relationships of the United States and Japan, see: John K. Emmerson and Harrison M. Holland, *The Eagle and the Rising Sun: America and Japan in the Twentieth Century*, Stanford, California, Stanford Alumni Association, 1987.

MARKETING IN THE YEAR 2000: THE JAPANESE SITUATION

Kazuhiko Okuda
Professor of Marketing
Senshu University

INTRODUCTION

Marketing in the year 2000 in Japan may be described in various ways. For example, the progress of internationalization in industry will obviously change the marketing strategy of Japanese companies in the twenty-first century. However, I will limit this presentation to a review of the basics of consumer behavior because of my specialization in the field of marketing.

This review of marketing, then, takes up two phases. These are Japan's position within the interdependent world and Japanese characteristics in the changing world.

JAPAN AND INTERDEPENDENT RELATIONSHIPS IN THE WORLD

It seems we cannot avoid economic tension among countries in the coming century because each national company will produce more and more goods by adding economic efficiency through hi-technology. However, we must not give up the precepts of free trade. Remember, this led to a major war in the middle of this century. We must recognize each's position in the coming century in order to minimize economic tension.

As we see in the Table 1 projection, Japan's share will exceed 10% of the world's GNP in the near future. Moreover, Japan's share of the export market will definitely exceed 10% unless there is drastic change to the present situation (Table 2). These facts, however, are not only a problem of surplus. They also mask other negative aspects for all of us.

Figure 1 symbolically shows one important aspect of a hidden trade surplus. The international TV market is an index on the "informationalizing" of the world. Moreover, this supply-demand structure gives a unique picture of the living culture in other countries. The understanding of information penetration and living style in other countries is a key point of consumer marketing at the international level. As we see in this chart, the lag between receiving and sending of the international TV picture is growing. This means that the interests for Japanese living culture are low as a whole. We want to inform other countries about Japanese living culture. We want to import foreign living culture more and more and export Japanese living culture. I believe that this kind of trade will be of mutual benefit in the future. For example, sushi and tempura are well known among world consumers as examples of the Japanese cooking style which has been proven for its health benefits. As these examples show, Japanese living culture has unique characteristics. Many aspects of the living culture are enjoyable in everyday life. We Japanese ask the foreign consumer to have a strong interest in Japanese living culture and to try out the essentials of everyday Japanese life such as food, clothing, and housing.

Now let's consider a basic characteristic concerning Japanese living culture in the coming century.

TABLE 1
COMPOSITION OF GNP IN THE WORLD
(unit: %)

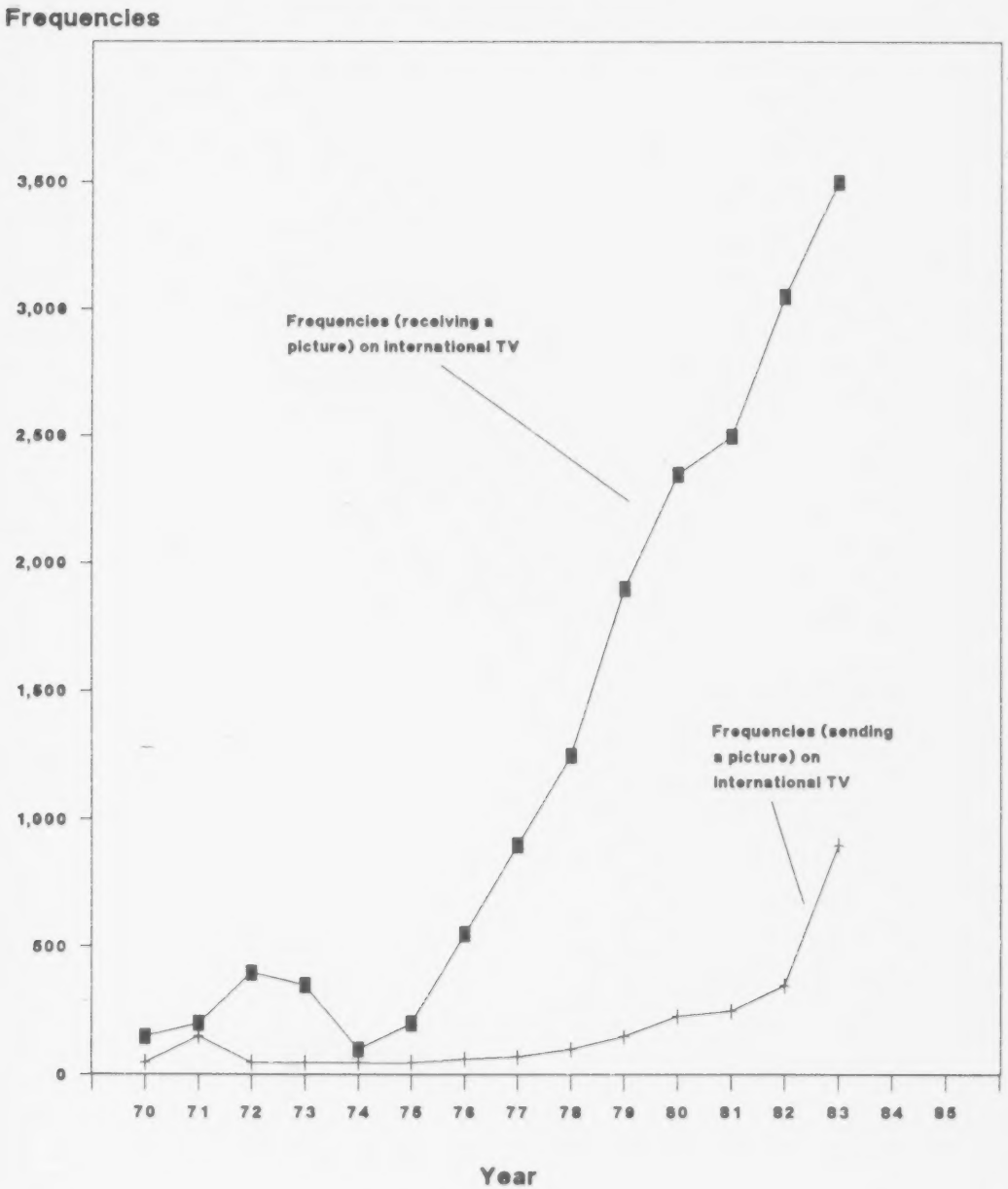
	1969	1980	2000
Industrialized Countries:			
Japan	3	10	12
United States	33	22	20
European Commonwealth	26	31	26
Subtotal	62	63	58
Developing Countries:			
N.I.C.S.	3	4	7
Others	11	11	13
Subtotal	14	15	20
Socialist Countries:			
Soviet Union	15	13	12
Eastern Europe	4	5	5
China	5	5	5
Subtotal	24	23	22
Total	100	101[1]	100

(Source: Government Economic Planning Agency in Japan)
[1]Total exceeds 100 because of rounding

TABLE 2
COMPOSITION OF GNP IN THE WORLD

Year	Export Amounts in the World (unit: $10 billion)	Japan's Share (unit: %)
1965	17	5.0
1966	19	5.2
1967	20	5.3
1968	22	6.0
1969	25	6.4
1970	29	6.7
1971	32	7.5
1972	38	7.5
1973	53	6.9
1974	79	7.0
1975	81	6.9
1976	92	7.3
1977	104	7.7
1978	121	8.1
1979	153	6.7
1980	187	6.9
1981	184	8.2
1982	171	8.4
1983	166	8.8
1984	177	9.6
1985	178	9.8

FIGURE 1
RECEIVING AND SENDING ON INTERNATIONAL TV IN JAPAN



(Source: KDD)

CHARACTERISTICS OF THE JAPANESE MARKET AS AN INDUSTRIALIZED COUNTRY

As shown in Table 3, Japan's consumption structure is changing. Spending on necessities is down and services expenditures are up. These trends are similar in other industrialized countries. However, there are particular Japanese characteristics behind the phenomena. I will explain this point starting with old age.

The percentage of elderly in the population in Japan is nearing the level of that in other industrial countries (Figure 2). Within 25 years this number will reach 14% of the total population. On the contrary, France needs 130 years to reach the same level. Moreover, the old worker's labor participation rates in Japan are very high (Table 4). This is very different compared to the trends in other industrialized countries where the elderly participation rate is much lower.

The ratio of elderly to total population is increasing; meanwhile, the elderly are typically more encouraged in Japan than in other industrial nations to seek or maintain jobs in the labor force and are respected for so doing. This condition creates a large target market which also concerns the spiritual frame of Japanese living culture.

The facts seem to be different in urban and rural districts. Elderly workers seek to delay their retirement in urban districts. In rural districts, elderly workers compose an elementary labor force. This point is very important, because all urban workers have their native families in the rural community. Though they work in the manufacturing and service industries and function in an urban environment, their way of life and their value system remains rural by nature. Of course, agricultural workers who are gainfully employed in old age compose only 10% of the whole worker population, and this level will be down in the year 2000.

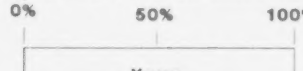
Though it is not obvious, rural culture and the elderly have an unusual influence in Japanese living culture. This fact strongly underlies the basis for rice's being the staple food in Japan. The production system, leisure style, and nutritional systems associated with rice in the rural com-

TABLE 3
CHANGE IN CONSUMPTION STRUCTURE
(unit: %)

Year	1963	1970	1980	2000
Food	39.7	33.6	29.3	22.2
Housing	9.8	10.6	9.5	11.1
Heat & Light	3.1	3.4	3.9	3.5
Clothing	12.5	11.3	9.3	8.3
Miscellaneous:				
Traffic, Communication, etc.	2.8	4.9	7.9	8.3
Education, Recreation, etc.	11.9	11.2	11.3	10.0
Medical Treatment, Hygiene	1.4	2.0	2.6	3.4
Others	18.9	23.0	26.3	33.2
Total Miscellaneous	35.0	41.1	48.1	54.9
Totals	*100.01	100.0	*100.01	100.0

*Exceeds 100% because of rounding.
(Source: Bureau of Statistics in Japan)

FIGURE 2
COMPOSITION OF POPULATION AND TRENDS TO THE OLD AGE RATE



	Years 0-14 / 15-64 / 65-up	Reach Year to the Old Age Rate 7%	14%	Years From 7% - 14%
United States ('84)		1945	2015	70
Sweden ('83)		1890	1975	85
West Germany ('82)		1930	1975	45
Japan ('85)		1970	1995	25
Australia ('83)		1940	2020	80
France ('83)		1865	1995	130
Great Britain ('83)		1930	1975	45
Korea ('84)		-	-	-
Thailand ('83)		-	-	-

(Source: The United Nations)

TABLE 4
INTERNATIONAL COMPARISONS OF OLD AGE LABOR FORCE PARTICIPATION
(unit: %)

	United States ('81)	Canada ('80)	West Germany ('80)	France ('81)	Japan ('80)
Men					
55 to 64	70.8	76.5	71.4	64.3	88.7
65 and up	18.5	14.9	;7.8	7.3	45.4
Women					
55 to 64	41.5	33.8	29.1	37.6	45.5
65 and up	8.1	4.1	3.0	2.9	15.6

(Source: Government Economic Planning Agency in Japan)

munities are each important components of the contemporary Japanese culture.

CONCLUSION

Marketing in the year 2000 will witness a higher level of concern than it does in the contemporary international environment. The competitive atmosphere of international markets will require a more sensitive and responsive approach to intermarket as well as to intramarket conditions. The most promising approach available which may help to assure a successful future can be found in a consumer-oriented rather than product-oriented approach to exporting. That is, it will be necessary through research to seek a deeper understanding of the social, economic, political and cultural foundations of international markets. The need to gather, analyze, and interpret quantitative measures of the populations of international markets will continue. Moreover, increasing emphasis will be directed toward comprehending the qualitative aspects of international cultures as they may relate to predicting behaviors among international consumers.

SELECTED ARKANSAS AND U.S. ECONOMIC INDICATORS

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THE OUTLOOK FOR 1988

Phillip Taylor
Director, Bureau of Business and Economic Research
University of Arkansas, Fayetteville

With the National economic growth projected by many economists to slow somewhat as 1988 progresses, a similar performance should be expected of the Arkansas economy. Even so, at this time there is reason to think that the economic growth of Arkansas in recent months was greater than popularly believed and that 1988 will be a growth year although, perhaps, a modest one.

While the number of unemployed in Arkansas increased by about 5,000 in 1987, there were also 27,000 new jobs. After drifting downward in the first five months of the year, the number of employed increased by almost 50,000, seasonally adjusted, between May and December. Moreover, this growth appeared to continue into January of the new year. The failure of the unemployment rate to show significant declines over the same period was due, at least in part, to an increase in the labor force of 53,000 workers, seasonally adjusted, in the last seven months of the year.

Increases in industrial production in recent quarters have been at, or near, the largest enjoyed since the end of the recession in 1982. Although the outlook for farm commodity prices seems to be improving at this point, 1987 witnessed further deterioration in the agricultural sector. A strong poultry market was a notable exception but overcapacity and rising feed costs will dampen growth in this industry in 1988.

1987 was the worst year, by a large margin, for residential construction in Arkansas since 1982. In fact, with adjustments made for inflation, it was the worst year of the 1980s. Nonresidential construction registered little growth last year but was about twelve percent lower than the peak post-recession year of 1984. With recent declines in interest rates, the outlook for residential construction should brighten but there appears to be little evidence that non-residential construction will rise significantly in 1988.

When the data are available, personal income (SAAR) in the fourth quarter should have reached the $28 billion level for the first time. That would mean, on an annual basis, a growth rate in excess of 4.5 percent, with a fourth quarter to fourth quarter rate of approximately 5 percent. Thus, while some sectors and geographic areas may not have had a good year, in the aggregate the state fared well.

The growth in employment achieved in the latter part of 1987 should carry forward, at least, through early 1988; and personal income for the year should rise at a rate only slightly less than in 1987. Growth rates may tend to slow by the last quarter of the year with, at least, a possibility of a no-growth period following the election. Many economists feel that the outlook will be largely dependent upon the levels of business investment and exports and that consumer spending will not be the source of continued expansion in the near term. These factors, along with the improved outlook for agricultural commodities, should be keys to Arkansas' continued economic expansion in 1988.

LABOR FORCE AND EMPLOYMENT
ARKANSAS

(Seasonally adjusted)

Year	Month	Civilian Labor Force (Units)	Total Employment (Units)	Agricultural Employment (Units)	Manufacturing Wage and Salary Employment (Units)	Unemployment Rate (Percent)
1980		999,000	923,000	65,100	210,050	7.7
1981		1,030,000	936,000	64,100	212,100	9.1
1982		1,018,000	919,000	63,440	195,625	9.8
1983		1,026,000	920,730	62,395	199,880	10.1
1984		1,044,000	951,000	61,600	209,750	8.9
1985*		1,051,000	960,000	46,250	210,317	8.6
1986		1,066,000	973,000	45,515	214,054	8.8
1987		1,088,000	1,000,000	45,000	219,000	8.1
	Jan.	1,086,549	1,007,637	45,518	216,547	7.9
	Feb.	1,085,953	1,000,794	45,699	215,509	8.0
	Mar.	1,079,153	988,367	45,822	214,559	8.5
	Apr.	1,071,634	985,556	45,700	214,712	8.0
	May	1,068,949	982,657	45,335	215,092	8.1
	Jun.	1,073,398	983,818	44,951	216,647	8.4
	Jul.	1,078,642	990,854	44,669	218,444	8.0
	Aug.	1,085,916	994,751	44,326	219,957	8.3
	Sep.	1,095,222	1,004,401	44,019	222,694	8.1
	Oct.	1,101,089	1,009,283	43,835	224,155	8.1
	Nov.	1,108,680	1,019,261	44,016	224,681	7.9
	Dec.	1,121,986	1,032,291	44,116	224,851	7.9

*Note: Labor Force and Employment data for the period 1985 forward have been reestimated by the Employment Security Division. The reestimation resulted in relatively large revisions in Agricultural Employment, with revisions to a less degree in Total Employment and Civilian Labor Force data. Consequently, the data for 1985 forward are not comparable to that for the prior period.

PERSONAL INCOME

Quarterly Changes in Personal Income, Arkansas and United States

(Seasonally adjusted, Percent)

	1986 Q-I thru 1986 Q-II	1986 Q-II thru 1986 Q-III	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III
Arkansas	− 0.9	+ 0.8	+ 1.5	+ 2.2	+ 0.2	+ 1.1
United States	+ 1.8	+ 0.8	+ 1.1	+ 1.9	+ 1.3	+ 1.4

Personal Income in Arkansas

(Seasonally adjusted, annual rate, Millions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	16,609	18,672	19,477	20,774	23,460	25,053	26,230	27,201[R]
Apr-Jun	16,509	19,109	19,808	21,184	22,989	25,598	25,999	27,245[R]
Jul-Sep	17,333	19,573	19,855	20,922	23,272	24,702	26,219	27,534[R]
Oct-Dec	17,976	19,325	20,460	21,939	23,724	25,258	26,623	
Annual	17,107	19,170	19,900	21,205	23,361	24,903	26,268	

[R]Revised

INDUSTRIAL PRODUCTION

Quarterly Changes in Industrial Production
Arkansas and United States

(Seasonally adjusted, Percent)

	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV
Arkansas	+ 1.9	+ 1.3	+ 1.5	+ 2.6	+ 1.1
United States	+ 0.8	+ 0.7	+ 1.1	+ 2.1	NA

Value Added by Manufacture in Arkansas

(Seasonally adjusted, annual rate, Millions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	6,553.6	7,167.6	7,474.8	7,884.9	8,824.6	9,278.8	9,525.8	10,088.1[R]
Apr-Jun	6,415.0	7,388.1	7,569.1	8,131.9	8,959.7	9,282.1	9,661.5	10,236.1[R]
Jul-Sep	6,688.3	7,601.8	7,581.8	8,398.0	9,078.2	9,351.9	9,758.6	10,504.7[R]
Oct-Dec	6,942.7	7,589.5	7,746.9	8,522.0	9,165.2	9,425.3	9,984.0	10,615.6
Annual	6,649.9	7,436.8	7,593.2	8,234.2	9,006.9	9,334.5	9,732.5	10,361.1

[R]Revised

CASH RECEIPTS FROM FARM MARKETINGS

Quarterly Changes in Cash Receipts, Arkansas and United States

(Seasonally adjusted, Percent)

	1986 Q-I thru 1986 Q-II	1986 Q-II thru 1986 Q-III	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III
Arkansas	− 4.2	+ 9.8	− 8.4	− 17.2	+ 25.9	− 8.0
United States	+ 12.7	− 8.3	+ 6.5	+ 1.5	− 8.1	+ 2.6

Cash Receipts from Farm Marketings in Arkansas

(Seasonally adjusted, annual rate, Thousands of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	3,502,043	3,000,200	3,361,304	2,694,585	3,413,896	3,304,397	2,906,663	2,318,321[R]
Apr-Jun	2,856,150	3,707,382	3,676,795	2,619,217	3,330,093	3,372,657	2,783,431	2,918,602[R]
Jul-Sep	3,231,322	3,741,914	2,788,726	3,052,996	3,237,918	3,078,619	3,055,931	2,685,059
Oct-Dec	2,851,132	3,165,755	3,257,519	3,005,163	3,218,677	3,334,832	2,798,564	
Annual	3,110,162	3,403,813	3,271,086	2,842,990	3,300,146	3,272,626	2,886,147	

[R]Revised

WATERBORNE COMMERCE: McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM

Quarterly Changes in Total and Internal Tonnages

(Seasonally adjusted, Percent)

	1986 Q-II thru 1986 Q-III	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV
Total	− 10.3	+ 0.3	− 9.2	+ 37.8	− 21.3	+ 13.2
Internal	− 22.7	− 9.6	+ 29.9	+ 10.6	− 24.4	+ 15.7

Freight Traffic

(Seasonally adjusted, annual rate, Thousands of short tons)

Time Period	Traffic Tonnages			
	Inbound	Outbound	Internal	Total[1]
1979	2,026	3,456	2,932	8,926
1980	1,611	4,643	2,408	9,133
1981	1,564	5,684	1,741	9,446
1982	1,520	4,611	1,561	8,258
1983	1,918	3,905	1,904	8,017
1984	2,128	4,264	2,433	9,490
1985	2,103	3,191	2,521	8,335
1986	2,608	3,453	2,962	9,703
1987[2]	2,131	3,348	2,752	8,885
Jan-Mar	1,959	2,236	2,849	7,607
Apr-Jun	2,115	4,615	3,151	10,480
Jul-Sep	2,130	3,040	2,382	8,251
Oct-Dec	2,321	3,883	2,755	9,342

[1]Total tonnage includes "through traffic."

[2]Sum of quarters does not equal annual totals because of moving seasonal adjustment factors.

ARKANSAS CONSTRUCTION CONTRACTS

Residential Construction Contracts

(Seasonally adjusted, annual rate, Thousands of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	579,535	717,596	476,221	832,231	970,733	772,571	847,535	658,206
Apr-Jun	570,914	650,033	603,819	924,893	975,386	783,307	659,716	629,007
Jul-Sep	701,817	554,552	700,002	927,382	923,195	697,197	751,803	636,208
Oct-Dec	711,993	609,074	812,219	936,924	804,441	813,027	715,082	677,710
Annual	641,064	632,813	648,065	905,357	918,439	766,525	743,534	650,283

Nonresidential Construction Contracts

(Seasonally adjusted, annual rate, Thousands of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	290,960	361,233	387,041	283,678	451,825	373,672	454,492	379,376
Apr-Jun	351,905	279,976	214,046	369,556	469,331	449,010	365,787	543,582
Jul-Sep	389,946	253,467	308,093	367,211	497,074	438,687	521,350	404,611
Oct-Dec	389,628	306,559	211,527	444,594	443,742	554,682	305,847	314,757
Annual	355,610	300,309	280,176	366,260	465,493	454,012	411,869	410,582

ARKANSAS LABOR FORCE ESTIMATES
December 1987, Not Seasonally Adjusted

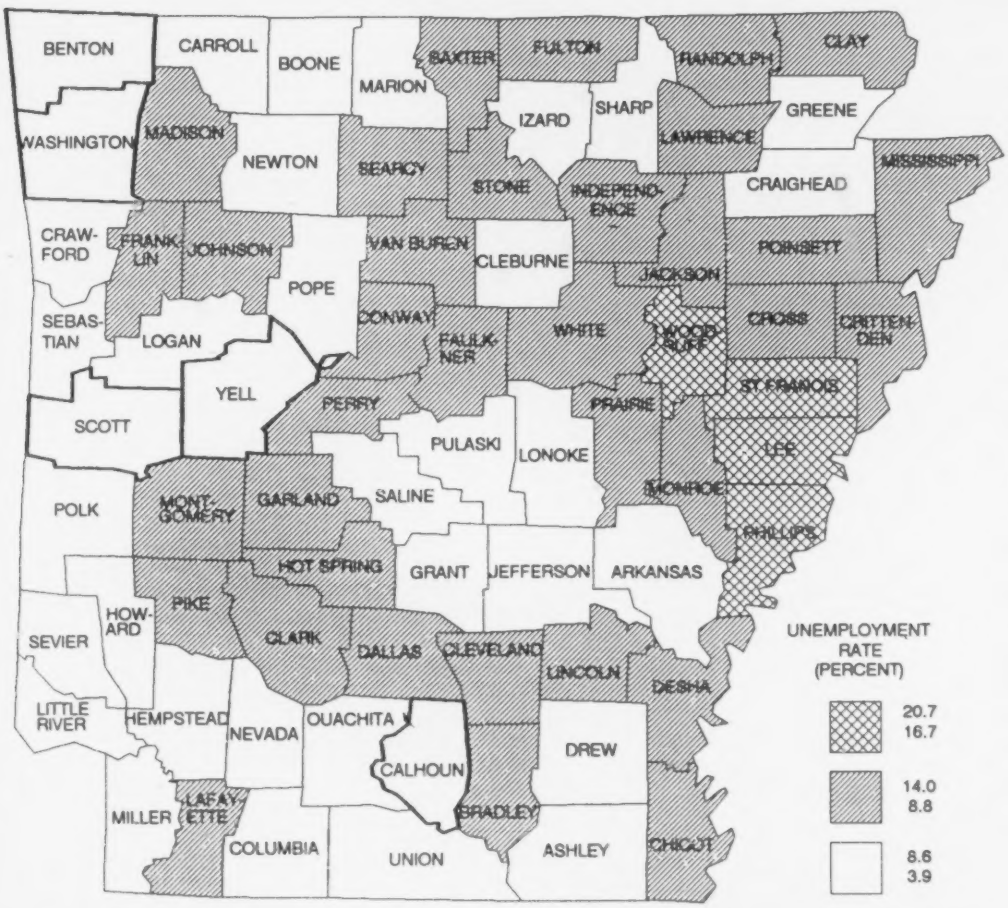
Area	Civilian Labor Force	Unemployment Rate	Total Employment
UNITED STATES	120,205,000	5.4	113,679,000
STATE OF ARKANSAS	1,100,600	7.9	1,013,400
Fayetteville-Springdale MSA	58,475	4.7	55,750
Fort Smith MSA	91,250	6.1	85,725
Little Rock-North Little Rock MSA	263,625	6.6	246,150
Pine Bluff MSA	36,750	8.4	33,650

County	Civilian Labor Force	Unemployment Rate	Total Employment	County	Civilian Labor Force	Unemployment Rate	Total Employment
Arkansas	10,325	7.3	9,575	Lee	4,425	18.6	3,600
Ashley	11,100	7.7	10,250	Lincoln	3,750	9.3	3,400
Baxter	11,400	9.0	10,375	Little River	5,225	8.6	4,775
Benton	50,025	3.9	48,050	Logan	9,250	8.6	8,450
Boone	15,150	5.6	14,300	Lonoke	17,050	6.6	15,925
Bradley	4,700	11.2	4,175	Madison	4,825	9.3	4,375
Calhoun	4,975	5.0	4,725	Marion	6,000	5.8	5,650
Carroll	10,000	8.5	9,150	Miller	18,325	7.5	16,950
Chicot	5,575	12.6	4,875	Mississippi	21,150	12.3	18,550
Clark	9,875	10.9	8,800	Monroe	4,925	9.1	4,475
Clay	8,125	9.8	7,325	Montgomery	2,625	9.5	2,375
Cleburne	7,825	8.6	7,150	Nevada	4,100	7.9	3,775
Cleveland	3,225	12.4	2,825	Newton	2,725	8.3	2,500
Columbia	12,625	7.1	11,725	Ouachita	13,550	8.1	12,450
Conway	7,700	8.8	7,025	Perry	4,025	9.3	3,650
Craighead	35,500	5.6	33,525	Phillips	9,875	16.7	8,225
Crawford	20,575	7.0	19,125	Pike	4,200	9.5	3,800
Crittenden	23,800	9.9	21,450	Poinsett	10,325	10.2	9,275
Cross	8,175	12.2	7,175	Polk	6,725	7.1	6,250
Dallas	4,375	12.0	3,850	Pope	23,525	6.3	22,050
Desha	6,900	10.1	6,200	Prairie	4,500	10.0	4,050
Drew	8,325	9.6	7,525	Pulaski	190,750	6.1	179,175
Faulkner	26,500	9.9	23,875	Randolph	7,350	10.5	6,575
Franklin	5,600	9.4	5,075	St. Francis	11,500	20.7	9,125
Fulton	3,675	10.9	3,275	Saline	29,325	7.3	27,175
Garland	31,625	9.7	28,550	Scott	6,450	4.3	6,175
Grant	6,000	7.9	5,525	Searcy	3,400	9.6	3,075
Greene	14,200	8.6	12,975	Sebastian	53,850	5.8	50,750
Hempstead	10,075	6.5	9,425	Sevier	6,375	6.7	5,950
Hot Spring	10,800	12.3	9,475	Sharp	5,600	8.5	5,125
Howard	5,900	6.4	5,525	Stone	3,775	12.6	3,300
Independence	15,575	8.3	14,275	Union	20,900	7.7	19,300
Izard	4,275	7.0	3,975	Van Buren	5,600	9.8	5,050
Jackson	8,225	14.0	7,075	Washington	58,475	4.7	55,750
Jefferson	36,750	8.4	33,650	White	25,250	11.7	22,300
Johnson	7,550	10.6	6,750	Woodruff	4,225	20.7	3,350
Lafayette	3,200	9.4	2,900	Yell	8,525	5.3	8,075
Lawrence	7,925	10.4	7,100				

Source: The Research and Statistics Section, Arkansas Employment Security Division, January 1988.

LABOR FORCE ESTIMATES
DECEMBER 1987

In December, Arkansas' Civilian Labor Force dropped 14,300 to total 1,100,600. Similarly, Total Employment saw a drop of 15,200 to total 1,013,400. The overall result of these changes was a rise in Unemployment of 900 to total 87,200. Of the 75 counties, Benton had the lowest unemployment rate at 3.9 percent and St. Francis and Woodruff, the highest at 20.7. Unemployment rates in 26 counties were equal to or below the state's 7.9 percent. In the MSAs, Fayetteville-Springdale had the lowest unemployment rate at 4.7 percent and Pine Bluff had the highest rate at 8.4 percent. The rates for the Fort Smith and the Little Rock-North Little Rock MSAs stood at 6.1 and 6.6 percent, respectively.

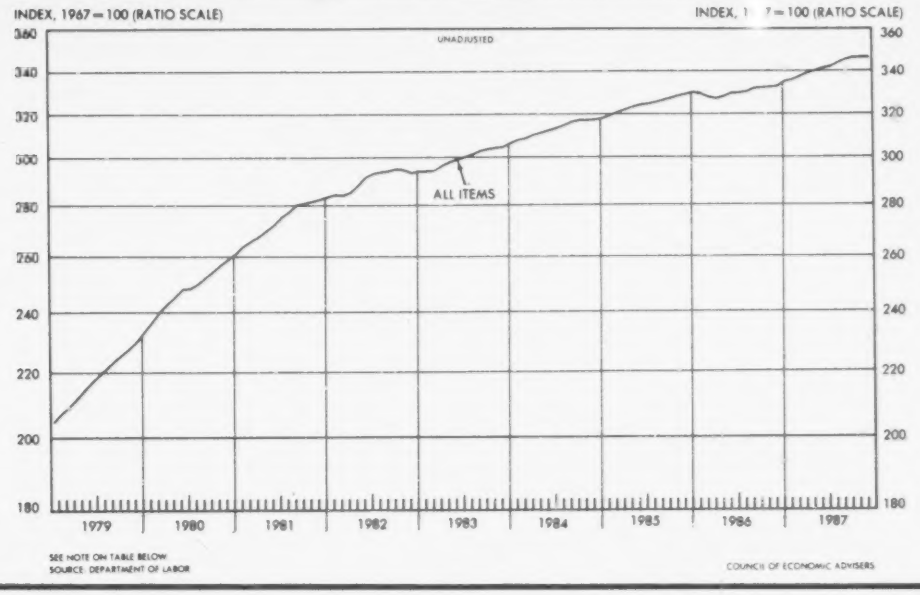


——— Boundary lines of counties having an unemployment less than or equal to the national average of 5.4%

Bureau of Business and Economic Research
College of Business Administration
University of Arkansas
Fayetteville, Arkansas 72701

CONSUMER PRICES—ALL URBAN CONSUMERS

In December, the consumer price index for all urban consumers rose 0.1 percent, seasonally adjusted (was about unchanged not seasonally adjusted). The index was 4.4 percent above its year-earlier level.



[1967 = 100, except as noted; monthly data seasonally adjusted, except as noted by NSA]

Period	All items [1] NSA	Food	Housing					Fuel and other utilities	Apparel and upkeep	Transportation			Medical care	Energy [2]	All items less food, energy, and shelter
			Total [1]	Shelter						Total [1]	New cars	Motor fuel			
				Total	Renters' costs (Dec. 1982 = 100)	Homeowners' costs (Dec. 1982 = 100)	Maintenance and repairs NSA								
Rel. imp. [3]	*100.0*	*16.2*	*42.9*	*27.8*	*8.0*	*19.6*	*0.2*	*7.9*	*6.3*	*17.2*	*4.6*	*2.9*	*5.4*	*7.4*	*48.6*
1980	246.8	254.6	263.3	281.7			285.7	278.6	178.4	249.7	179.3	369.1	265.9	361.1	208.3
1981	272.4	274.6	293.5	314.7			314.4	319.2	186.9	280.0	190.2	410.9	294.5	410.0	228.1
1982	289.1	285.7	314.7	337.0			334.1	350.8	191.8	291.5	197.6	389.4	328.7	416.1	245.6
1983	298.4	291.7	323.1	344.8	103.0	102.5	346.3	370.3	196.5	298.4	202.6	376.4	357.3	419.3	258.4
1984	311.1	302.9	336.5	361.7	108.6	107.3	359.2	387.3	200.2	311.7	208.5	370.7	379.5	423.6	271.2
1985	322.2	309.8	349.9	382.0	115.4	113.1	368.9	393.6	206.0	319.9	215.2	373.8	403.1	426.5	281.6
1986	328.4	319.7	360.2	402.9	121.9	119.4	373.8	384.7	207.8	307.5	224.4	292.1	433.5	370.3	291.2
1987	340.4	333.0	371.0	421.8	128.1	124.8	387.3	380.7	216.9	316.8	232.5	303.9	462.2	371.7	302.2
1986: Dec.	331.1	327.2	362.7	410.3	124.5	121.5	380.0	374.3	209.5	303.6	230.9	260.9	448.2	344.6	295.5
1987: Jan.	333.1	328.6	364.4	412.2	125.4	122.0	382.1	375.9	210.4	308.3	231.8	278.0	450.2	354.9	297.0
Feb.	334.4	329.6	365.8	414.3	126.0	122.6	381.9	377.1	211.8	309.8	229.3	289.5	451.7	361.5	297.4
Mar.	335.9	329.2	367.2	416.5	126.7	123.2	383.4	377.6	215.4	311.8	229.4	296.2	453.7	365.2	298.8
Apr.	337.7	330.2	368.2	418.0	127.0	123.7	382.4	378.1	218.6	313.4	230.4	298.4	456.5	366.2	300.5
May	338.7	332.0	368.9	419.2	127.2	124.2	381.9	378.1	219.1	314.4	231.1	299.7	459.1	366.8	301.4
June	340.1	334.4	370.1	420.1	127.7	124.3	385.0	381.0	217.3	316.0	232.0	303.6	462.1	372.2	301.9
July	340.8	333.8	370.9	421.4	128.8	124.4	392.4	380.8	215.9	317.8	233.2	307.2	464.6	372.5	303.0
Aug.	342.7	333.9	373.1	424.1	129.2	125.4	391.3	383.2	216.0	320.0	233.3	316.4	466.3	378.7	303.8
Sept.	344.4	335.6	373.1	424.7	128.8	125.8	390.5	381.2	218.3	320.5	233.5	315.9	468.6	376.8	304.4
Oct.	345.3	336.9	373.8	427.0	128.5	126.9	390.9	378.5	221.1	322.0	234.8	315.5	470.7	373.5	305.9
Nov.	345.8	337.1	374.8	427.9	128.7	127.2	393.2	381.5	222.2	323.5	235.7	316.1	472.4	376.6	307.0
Dec.	345.7	338.9	375.7	430.1	129.4	127.8	392.7	380.2	219.6	322.1	235.2	309.3	474.5	372.4	306.8

[1] Includes items not shown separately.
[2] Household fuels—gas (piped), electricity, fuel oil, etc.—and motor fuel. Motor oil, coolant, etc. also included through 1982.
[3] Relative importance, December 1986.

NOTE.—Data beginning 1983 incorporate a rental equivalence measure for homeownership costs and therefore are not strictly comparable with figures for earlier periods. Data beginning 1987 calculated on a revised basis.

SOURCE: Department of Labor, Bureau of Labor Statistics.

REVIEW EDITORIAL POLICY STATEMENT

The Arkansas Business and Economic Review is dedicated to information relevant to the business and economic environment of Arkansas. Thus, the editor invites manuscripts in the following general subject areas for consideration for publication:

1. Problems and issues of the Arkansas business community and economy;
2. Regional and industrial problems that have implications for the Arkansas economic community;
3. National business and economic issues of general interest to the people of Arkansas;
4. Business and economic theory; and
5. Articles of interest to both practitioners and academics in business.

Each manuscript should be double-spaced and submitted in triplicate. The length of the article should not exceed 20 pages including tables, appendices and references. Each chart or table should be camera ready, that is, an original on a separate page. References are to be listed on a separate page at the end of the submitted article and are to be numbered sequentially in order of textual citation with a corresponding superscript at the point of reference. The listing will be used as "Endnotes" to the published article and should be in footnote format.

For example, as a minimum, each endnote item will indicate:

For a book: list (as appropriate) author's first name, middle initial, and surname; the title of the book; publication data including place, publisher, and date; and the page number(s) in the citation.

For an article in periodical: list (as appropriate) the author's first name, middle initial, and surname; title of the article; name of the periodical; volume number or month and year for the issue; and page number(s) in the citation.

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The Mineral Industry of Arkansas

Cumulative Index, 1986-87

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THE PRESIDENT-PROFESSOR: BUSINESS REALITY IN THE CLASSROOM

Herman S. Napier
Professor of Management
University of Arkansas, Fayetteville

H. Charles Johnston
Chairman Emeritus
First Federal of Arkansas

At a time when business schools are being accused of teaching too much theory and losing touch with real business problems, and the business community is portrayed as having somewhat less than ideal ethical practices and social responsibility, a search for more direct relationships between academia and business seems especially appropriate. As a case in point, managers often voice the sentiments expressed by Roy Serpa, a manager with Gulf Oil Chemical Company, when he commented that too many managers look on management theory as "irrelevant and useless".[1] It does not help that a study of professors teaching business policy, the "Capstone" course, found that 1) professors with little work experience read more academic and empirical journal articles than practical materials from the world of business, and that 2) these are the same individuals who are doing most in the research field of business policy.[2] It seems clear that communications and relationships between the two communities can and should be improved.

Business colleges have made various efforts to get their professors out in the field, consulting on a part-time basis and attempting in other ways to bring the "real world" to the classroom. "Businessmen in residence" and other piecemeal efforts have been of real benefit, but have generally lacked continuity. In sum, it appears that these limited efforts are not enough.

Another manager vs. classroom possibility, to be discussed in this paper, is the use of managers as full-time teachers or adjunct professors for periods of one semester or more. Two questions arise here. One is, "Where do you get them at minimum cost to the college"; the other is, "How do you insure that they are effective teachers." Both are discussed in detail below.

The world of business should be a fertile field for any university in search of executives to fill these various roles effectively. The problem should be only one of selectivity. A quick screen that could be used is to consider only senior-level managers of the vice-president or president rank. The difficulty, of course, is time, for any viable contribution by the manager in question will require a considerable time commitment. The problem works both ways in that few companies can afford lengthy commitments from key executives.

There are several alternatives that come to mind to alleviate this situation. Circumstances may occur when a "sabbatical" from the firm could serve the best interests of both the business and the individual. The president of a firm might wish to turn control of the company over to a potential successor, and let him or her manage for a time without having a monitor looking over the shoulder. In this case, the president would intend to return and take over full control. A similar situation could apply

when the president is soon to retire for some reason or wishes to try out a new president on a temporary basis. Another condition arises when the top manager may have already retired, but is not ready to become completely inactive and wishes to "phase out" while at the same time making a positive contribution to the community as well as to future managers who are the students of today. Firms may wish to offer to key senior executives a one semester, or even a one year, leave of absence as a way of providing those key executives with new vistas, opportunities for further study, the use of university research facilities and other openings to broaden horizons to the advantage of both the firms and the individual executives. The point of this discussion is that the company, its executives, and the university can all profit from such a program so full of explicit and implicit advantages for all concerned.

It may be of no small moment that at a time when higher education in general, but especially in the state of Arkansas, is in a money shortage of no small dimension there should be a program such as this that can contribute directly to easing the problem. Exactly how the adjunct program could affect money saving is an open question but certainly one that can be viewed with optimism.

But how can a business college be assured that students are being properly served when exposed to a relatively inexperienced teacher? Perhaps the simplest answer lies in the team teaching concept, where the loaned executive shares class time with an experienced senior professor. We would recommend a professor of business policy because it is concerned with integrating the courses already taken by the business student into an overall view of the activities of the firm. As the executive becomes more effective and more confident, the class (deliberately started as a larger-than-normal size) could be divided into two classes. An obvious gain here would be that the college could handle more students in the business policy field during any given semester. Put another way, such an arrangement would reduce the teaching load for regular faculty members and increase their effectiveness. Even if the situation did not seem to lend itself to dividing the class, the two instructors could still handle a larger-than-normal class by dividing teaching tasks in the same classroom. But will this idea of the adjunct professor/loaned executive really work?

The University of Arkansas College of Business Administration at the Fayetteville campus recently began pilot work aimed toward developing such a program. A modest amount of money ($5,000) was set aside by the Board of Trustees to support the effort as an experimental teaching program and the first phase was completed in the Fall of 1984. Based upon the results of that trial, plans were made for a more formal demonstration. The basic question addressed was related to the feasibility of such a program designed to contribute to an overall teaching effort and to improve communication with the business community in general.

Two businessmen in the local community were recruited for the trial run. Both were company presidents; one from a family-owned firm in the metals field and the other from a publicly held integrated energy company with approximately $100,000,000 in sales. Both executives worked with a senior professor in one class of students in the undergraduate business policy course. The class consisted of a minimal number of lectures, and depended to a large extent on the use of cases for more realistic situations involving business decisions. A computerized business game, simulating a manufacturing firm, was also used to emphasize the dynamic or changing pattern of business decisions. In addition, students were required to read and

be prepared to discuss articles from well-known business magazines (e.g., *Fortune*, *Forbes*). The general thrust of the class was initiated by the regular instructor but during the discussion on cases and articles the executives volunteered comments and were asked questions by both the students and the resident instructor. While observing students participating in the business game, the executives usually listened to the discussion and suggested more attention to areas that could be overlooked if consideration was given only to the data presented. In this first experimental trial no effort was made to engage the executives in research projects.

It is still too early to make other than general statements regarding the value of the program under study, but even during the first trials, an attempt was made to test student reactions. Informal queries were made to students throughout the term and a request for written comments ("good" and "bad") was made late in the semester. A sampling of comments is presented below:

> "Students have access to individuals already where the students want to be."
>
> "I like getting away from book learning and theory. It's hard to relate theory and 'real world' situations."
>
> "Gives us an edge over students who don't have this (up-to-date) information."
>
> "Makes students feel better about interviewing and talking to executives when job hunting."
>
> "They bring up points the professor may not have considered."
>
> "What they are saying is sometimes more significant than the book—it is real!"

But all is not sweetness and light:

> "Causes some uneasiness in the classroom."
>
> "They use business terms the student is not aware of."
>
> "Difficult questions are sometimes asked of students."
>
> "Need a format as to why they say what they do. We want to know."

It has been clear from observing student behavior during the classes that they perceived this experience as quite different from the "visit for a day" type of executive exposure. Students had more time to become at ease and were more willing to ask the questions they appeared to be sincerely interested in. By the end of the term, students were remaining after class to talk to the executives on a wide range of subjects—a situation not as frequently experienced by the regular instructor.

What about the executives themselves? Their principal gain seemed more to be in the area of getting to know the students. For one thing, they seemed in a better position to form their own perception of the caliber of student soon to enter the business world. In another area, the executives (now five) who have participated in this program have begun to register more interest in research. In fact, one is the co-author of this article.

What is the next step? While the program described was conceived as an effort by the College of Business Administration to better its communication with the business community (and this is still perceived as a valuable contribution), some new and different perspectives present themselves. It has become obvious that depending on the level of executive (adjunct) interest and time availability, contributions by these individuals can be expanded. Some of the executives have been quite vocal in expressing their views on curriculum content and even course design, and at least two adjunct professors are now teaching standard courses without assistance. At a time when cost containment is becoming a dominant factor in the life of most communities, it is only logical that continuing

efforts be made to take advantage of this type of cost-effective asset utilization. Publicity given to the content of this article could be of help not only to the program, but also in furthering its potential value to other institutions and eventually to the state of Arkansas itself.

[1]Serpa, R., "Bridging the Gap Between Theory and Practice in Management," paper presented at the Academy of Management meeting, 1983, Dallas, TX.

[2]Alexander, L.D., et al., "How Academy Members Teach the Business Policy Course," paper presented at Academy of Management meeting, 1984, Boston, MA.

MANAGING FOREIGN EXCHANGE RISK: THE ARKANSAS EXPERIENCE

Dr. John S. Kaminarides
Professor of Economics and Director, Office of Business Research
Arkansas State University

Charles W. Ford
Professor of Marketing
Arkansas State University

INTRODUCTION

The purpose of this paper is to describe, analyze and measure the foreign exchange exposure that is faced by Arkansas exporters. This paper further determines the effects of foreign exchange risk on the marketing and pricing of a product abroad and it explains how foreign exchange exposure can be covered through hedging and pricing mechanisms.

Foreign Exchange Exposure

In our analysis, foreign exchange exposure is defined as: "A measure of potential profitability, or loss, in net cash flow or market value caused by a change in foreign exchange rates."[1] The types of exposure are:[2]

Translation or accounting. It measures changes in the consolidated *financial statements* caused by changes in exchange rates. It relates financial statements and exchange rates.

Transaction. It measures the impact of change in exchange rates on *outstanding foreign obligations*. It relates international transactions and exchange rates.

Economic. It measures the change in expected *cash flows* due to unexpected change in exchange rates. It relates cash flows and exchange rates.

In addition to fluctuating exchange rates, the foreign exchange exposure is caused by exports or imports of goods and services that are transacted on credit terms and by the prices of exports stated in foreign currencies.

Hedging Against Foreign Exchange Exposure

To protect an organization or business from open exposure in foreign exchange markets, the firm should manage foreign exchange exposure through the traditional hedging approaches or through the pricing mechanism, a technique developed by the authors.[3] The five traditional hedging methods used for managing foreign exchange exposure are:

a. Hedging in the forward exchange markets;
b. Hedging through the spot exchange and money markets;
c. Balancing the monetary position of foreign transactions;
d. Pricing the product by using a currency basket;
e. Reduction of transaction risk through balance sheet adjustments in strong vs. weak currency countries.

In addition to the above hedging methods, the authors have developed two pricing formulas for covering the foreign exchange exposure through the pricing mechanism.[4]

a. Adjusted international price reflecting hedging in the forward market.
b. Adjusted international price reflecting

hedging in the spot exchange and money markets.

The formula that is used to express hedging in the forward exchange market is:

1. $F_A = (A \times R_F)$

where:

F_A = Amount due to exporter in the forward market

R_F = Forward rate

A = Amount due to exporter

If the exporter is hedging through the spot exchange and money markets, he hedges on the basis of equation 2.

2. $M_A = (A/1 + i_{wg})\, S\, (1 + i_{us})$

where:

M_A = Amount due to exporter in money market

S = Spot rate

i_{wg} = West Germany interest rate

i_{us} = New York interest rate

A = Amount due to exporter

The adjusted international price methods developed by the authors to reflect the foreign exchange exposure caused by fluctuations in exchange rates are expressed in formulas 3 and 4.

3. $$P_A = P_R \left[1 + \left(\frac{R_S - R_F}{R_F} \right) \right]$$

4. $$P_A = \frac{(A/1 + i_{wg})\, S\, (1 + i_{us})}{Q}$$

where:

P_A = Adjusted international price

P_R = Regular price, i.e., full cost pricing or variable cost pricing

R_S = Spot

Q = Quantity

For the purpose of discussion, let us assume that an Arkansas exporter sells Q=10,000 bushels of soybeans at 10 DM per bushel to a German importer. Given are the spot rate (R_S) of DM = \$.4425; the 90-day forward rate of DM = \$.4380; the i_{us} = 12%; the i_{wg} = 10%. If the payment was made at the time of delivery, the Arkansas exporter will receive \$44,250 (100,000 DM × \$.4425). If payment is made in 90 days, the exporter, by hedging in the forward exchange market will receive \$43,800 according to formula 1.

$$F_A = (A \times R_F) = 100{,}000 \times .4380$$
$$= \$43{,}800$$

If the Arkansas exporter decides to hedge through the spot exchange and money market, he will receive, according to formula 2, an amount of \$44,465.85 at the end of 90 days.

$$M_A = \left(\frac{100{,}000}{1 + .10/4} \right) .4425$$
$$(1 + .12/4) = \$44{,}465.85$$

The Arkansas exporter, according to adjusted international price analysis, has the option to sell the product by adjusting the price of soybeans in the forward market to reflect the foreign exchange risk, and thus cover foreign exchange exposure as shown in formula 3.

$$P_A = 10\text{DM} \left[1 + \frac{(.4425 - .4380)}{.4380} \right]$$
$$= 10\,(1.0103) = 10.103\ \text{DM}$$

The exporter, by selling the soybeans at 10.103 DM per bushel, will receive in 90 days 101,030 DM. If this amount is converted at the 90 days forward exchange rate of \$.4380, the exporter will receive \$44,251. This is as much as he would have received from selling cash upon delivery and converting DM receipts to dollars at the spot rate (\$44,250).

Another recommended method of estimating the adjusted international price of soybeans is the one expressed by formula 4.

$$P_A = \frac{\left(\frac{100{,}000}{1 + .10/4}\right) .4425\,(1 + .12/4)}{10{,}000}$$

$$= \frac{\$44{,}465.85}{10{,}000} = \$4.45 \text{ or } 10.5\text{DM}$$

If the exporter in pricing the product follows the spot exchange and money market method, he will charge (10,000 × 10.5 DM) = 100,500 DM or $44,471 (100,500 DM × $.4425). Because of rounding, this amount does not match exactly the amount estimated under formula 2, M_A = $44,465.85.

In summary, if $F_A > (A/1 + i_{wg})\,S\,(1 + i_{us})$, then the international price is estimated through the forward market. But if $F_A < (A/1 + i_{wg})\,S\,(1 + i_{us})$, then the international price is estimated through the spot market and money market.

In short, the options to exporters are:[4]

Option 1:

IF

$F_A > (A/1 + i_{wg})\,S\,(1 + i_{us})$

THEN

exporter Sells Forward

OR

exporter Prices Product Using:

$$P_A = P_R \left[1 + \frac{R_S - R_F}{R_F}\right]$$

Option 2:

IF

$F_A < (A/1 + i_{wg})\,S\,(1 + i_{us})$

THEN

exporter borrows in West Germany and lends in New York

OR

exporter Prices Product Using:

$$P_A = \frac{(A/1 + i_{wg})\,S\,(1 + i_{us})}{Q}$$

Determining Arkansas Foreign Exchange Exposure

The first and second sections of this study dealt with the measure and management of foreign exchange exposure. This section of the study intends to measure the possible foreign exchange exposure realized by Arkansas' exporters.

The floating exchange rates of the dollar since the abandonment of the Bretton Woods system in 1971 influenced the smooth trade relations between Arkansas exporters and the rest of the world. Economic theory suggests that an overvalued dollar makes the exported product more expensive and, thus, less competitive in the world market.[5] Fluctuating exchange rates on the other hand develop conditions causing foreign exchange exposure.

In an effort to measure the foreign exposure faced by firms in Arkansas, a survey was conducted of the major financial institutions and the largest exporters and importers in the state. The survey instrument was developed with the assistance of personnel from the international divisions of financial institutions.[6] The questionnaire was designed to measure Arkansas' foreign exchange exposure by determining the value of the time drafts and letters of credit related to Arkansas' international trade.

RESULTS OF THE SURVEY

The results of our survey showed that most of the exporters from Arkansas experienced very little, if any, foreign exchange exposure. To quote the largest exporter in Arkansas, "Our foreign sales are for U.S. dollars, therefore, we are not exposed to the fluctuations in foreign exchange rates."

It has been reported by both the banks and the exporters that almost all the letters of credit that were issued in favor of Arkansas exporters were in U.S. dollars and, thus, the exporters were not exposed to any foreign exchange rate fluctuations.

In general, the foreign exchange exposure related to Arkansas exports was reported to be minimal and in most cases zero because almost all credit exports were expressed in U.S. dollars.

In the case of foreign exchange exposure related to imports, the survey revealed that several Arkansas importers intentionally exposed themselves to foreign exchange risk. They issued letters of credit to foreign exporters in the exporters' own currency. Under such conditions, the Arkansas importers could have had a foreign exchange loss if the dollar depreciated relative to foreign currencies and they could stand to gain if the dollar appreciated by the time payment on imports was due. One obvious way for the importers to avoid the foreign exchange risk is to cover themselves by hedging in the forward market.

Most of the Arkansas importers, however, have chosen not to hedge in the forward market, but to speculate in the foreign exchange market. As is the case with all speculators, the Arkansas importers purposely assumed an open position in the foreign exchange market with the intent of making a windfall profit from fluctuations in the rate of exchange. When the speculator expects the exchange rate of a specific currency to rise in the near future, he goes *long* on that currency by buying it. The Arkansas importers, by anticipating a stronger dollar, assumed an open position in the foreign exchange market expecting to make a profit by buying the foreign currency in the future at a depressed rate. For example, an Arkansas importer will make $10,000 profit if he imports from Germany crystal vases valued at 100,000 DM and he chooses to pay in DM ninety days later, at which time the exchange rate of the dollar changes from the spot rate $ = 2.00 DM to $ = 2.50 DM. That is, in 90 days the importer will pay $40,000 = DM 100,000 ÷ 2.50 instead of spot value of $50,000 = DM 100,000 ÷ 2.00. The survey revealed that many major Arkansas importers preferred to speculate rather than hedge in the foreign exchange market, because they were expecting the dollar to appreciate against foreign currencies.

As stated earlier, an overvalued dollar makes imports in the United States cheaper and very competitive in the domestic market. The increase in imports by Arkansas importers, and their willingness to speculate in the foreign market, was not an idiomatic function of importers, but a symptomatic consequence of a strong dollar.[7]

It has been shown by many studies that the overvalued dollar has resulted in the crises of several key American industries and has contributed to the towering trade deficit. In 1985, Treasury Secretary James Baker estimated that the high value of the dollar had caused half of the U.S. trade losses. Fred Bergstein of the Institute of International Economics (IIE), blames the overvalued dollar for as much as 75 percent of the current negative trade balance.[8]

GENERAL OBSERVATIONS

The adverse effect that a strong dollar has on U.S. exports is reflected by the decline of Arkansas' agricultural and manufactured exports in recent years from 3.0 billion in 1981 to 2.7 billion in 1984. Considering the theoretical arguments about exchange rates and the findings of our survey in Arkansas, some general observations can be made:

1. A strong dollar makes American products more expensive in the foreign markets and, thus, less competitive worldwide. Conversely, imports become less expensive in the United States and, thus, more competitive in the national market. Export data for the State of Arkansas reflect the inverse relationship be-

tween the value of the dollar and exports.[2]

2. Fluctuating exchange rates make matters worse for U.S. exporters because of the foreign exchange exposure. The survey, however, indicated that most Arkansas exporters reduced the foreign exchange exposure by trading in dollars.
3. Although the Arkansas exporters managed to reduce their foreign exchange risk by trading in dollars, the problem remains with foreign importers of American products. Whenever the Arkansas exporter covers himself from foreign exchange exposure by trading in dollars, he passes this risk on to the foreign importers of Arkansas products. The foreign importers have to cover themselves in the forward exchange market to avoid potential losses from further appreciation of the dollar. This foreign exchange exposure faced by the foreign importers of Arkansas products affects negatively the foreign demand for Arkansas products, or Arkansas exports.
4. To what extent the quantity demanded for Arkansas products is affected as a result of increases in the value of the dollar or the foreign exchange exposure depends on the elasticity of demand for Arkansas exports. If the demand for Arkansas exports is relatively elastic, Arkansas exports will decline at a greater rate than the increase in the price of exports caused by the strong dollar or foreign exchange exposure. Most agricultural commodities exported from Arkansas are highly competitive in a specific foreign market. They compete with domestically produced farm products and with products supplied by other foreign countries. Thus, since the demand for Arkansas products in a foreign market tends to be relatively elastic, the volume of Arkansas' exports is negatively affected by an increase in the price of the exports due either to the appreciated dollar or the actual increase in the price of the product.
5. If a strong dollar or foreign exchange exposure makes the Arkansas exports more expensive and, thus, less competitive, it is to the advantage of the state to identify ways of increasing the demand for its exports. Some of the suggested means of increasing the demand for exports are:
   a. find new markets for the products;
   b. improve procedures for marketing products abroad more effectively;
   c. assume payments in foreign currency, thus reducing the foreign exchange exposure faced by foreign importers of Arkansas products;
   d. There are many other variables that also affect the demand for exports, but they are beyond the scope of this study. Some of these factors are related to: cheaper and more efficient transportation, more generous and less expensive credit, more advanced and effective managerial techniques, more promotional efforts, better understanding of the socioeconomic and cultural environment of our trading partners, reduction of political risks, and the removal of import barriers.

In short, it can be said that the strong and fluctuating dollar of the last six years has adversely affected the Arkansas exports and encouraged more imports which in turn affected negatively some import-sensitive producers in Arkansas.

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[1]David Eiteman and Arthur I. Stonehill, *Multinational Business Finance*, 4th ed., Massachusetts: Addison-Wesley Publishing Company, 1986, p 146.

[2]Ibid, pp. 147-184.

[3]John S. Kaminarides and Charles W. Food. "Managing Foreign Exchange Risk: The Arkansas Experience." Office of Business Research, College of Business, Arkansas State University, January 1987, pp. 13-19.

[4]Ibid, p. 19.

[5]Peter H. Lindert, *International Economics*, 8th Edition, Homewood, Illinois, Richard D. Irwin, Inc., 1986, p. 5.

[6]Kaminarides and Ford, pp. 37-41.

[7]Ibid, p. 29.

[8]Congressional Correspondence between Congressman Bill Alexander, Arkansas and Congressman Stephen Neal, Chairman, Subcommittee on International Finance, May 5, 1986.

[9]Kaminarides and Ford, p. 25.

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THE IMPACT OF THE TAX REFORM ACT OF 1986 ON ARKANSAS: A FINANCIAL ANALYSIS

Raymond A. K. Cox
Assistant Professor of Finance
Central Michigan University

R. Gene Stout
Associate Professor of Finance
Central Michigan University

INTRODUCTION

In a recent article of the *Arkansas Business and Economic Review*, Chang-Yang Lin analyzed the locational factors and prevailing economic conditions responsible for regional investment in Arkansas.[1] Lin suggests that his estimates of the elasticity of investment with respect to the relative rate of return (rate of return to investment in Arkansas relative to the rate of return to investment in the U.S.) could be used to analyze the effects of policy measures on regional investment if the relationship between the relative rate of return and policy variables, for example, tax law changes, were known.

This article presents a financial analysis of the impact of the federal Tax Reform Act of 1986 (TRA) on the rate of return to business investment in Arkansas, the Southeast Region of the U.S., and the U.S. The article summarizes the effects of the TRA on investment in various industries and examines the industry composition of Arkansas, the Southeast Region and the U.S. The primary purpose is to combine industry effects with industry composition to assess the impact of the TRA on business investment in Arkansas. The methodology may be useful in relating policy variables to relative rates of return.

THE TAX REFORM ACT OF 1986

A summary of the more important provisions contained in the TRA and the previous tax code, Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982, affecting corporate taxes is in Table 1.

INDUSTRY EFFECTS

Most basically, the TRA reduces business tax credits in exchange for lower tax rates. Thus, the effect of the TRA on the profitability of business investment in an industry depends upon factors specific to the industry. The most notable industry-specific conditions which will determine the industry impact of the TRA are the use of depreciable assets, the average level of business income, and the reliance upon investment tax credits (ITC) modified by the TRA. On the surface, industries with relatively low investments in plant, equipment, and other depreciable assets would have relatively small changes in depreciation allowances and relatively small costs of foregone ITC to exchange for lower tax rates. Similarly, industries with relatively high levels of business income and industries not qualifying for the tax credits reduced by the TRA have the most to gain, possibly the least to lose, from the tax law change.

To determine the effects of the TRA on the profitability of business investment to owners or common stock (equity) participants, a $1,000 investment is simulated, under the prior (TEFRA) and the new (TRA) tax codes, into each of eight basic industries as reported by the Department

TABLE 1
SUMMARY OF TAX CODE CHANGES[a]

Feature	TEFRA (1982)	TRA (1986)
a. Corporate income tax brackets, rates	Progressive rates through 5 corporate income brackets, with a top marginal rate of 46 percent on corporate income above $100,000	Progressive rates through 3 corporate income brackets, with a top marginal rate of 34 percent on corporate income above $100,000 (additional 5 percent tax on corporate incomes between $100,000 and $335,000)
b. Depreciation system	Accelerated Cost Recovery System (ACRS): 5 recovery classes, 150 percent of the declining balance, half-year convention, straight line switch	Modified Accelerated Cost Recovery System: 6 recovery classes, 200 percent of the declining balance half-year convention which carries recovery beyond the recovery period, straight line switch
c. Tax credits		
1) Investment tax credit	Complex rules which generalize to a 6 percent (3 year assets) or a 10 percent (5 year assets) credit for qualifying investments	None
2) Research tax credit	25 percent of qualifying expenditures	20 percent of qualifying expenditures, extended 3 years
3) Targeted jobs tax credit	50 percent of qualifying first-year wages and 25 percent of qualifying second-year wages	40 percent of qualifying first-year wages only
4) Nonconventional sources of fuel tax credit	Producing fuel credit varied depending on source. Expiration Dec. 31, 1985.	Modified and extended through Dec. 31, 1987.

of Commerce and the Internal Revenue Service (IRS). The industry-specific factors are captured by using the most recent industry-level balance sheet and income statement data of the IRS.[3]

The profitability calculations assume that financial conditions not specifically addressed by the TRA would remain unchanged. For example, the fraction of the investment funded from equity and the fraction funded from debt are the same as previously existed. Similarly, the fractions of the investment which are depreciable, depletable, and working capital are the same fractions as previously held. And finally, the fractions of debt funding from interest-bearing and non interest-bearing debt sources also remain unchanged. Thus, the calculations disregard any financial structure or other behavioral changes that may be induced by the tax code revision or anticipation of the tax code revision. This weakness, assuming other factors unchanged, is necessary because there is no way to estimate tax code revision induced changes in financial structure. Industry factors that the TRA specifically addresses, however, are taken into the profitability calculations, *ceteris paribus*. These factors include depreciation rates, tax rates, and tax credits.

Since the equity portion of the $1,000 investment differs by industry, the profitability of the investment cannot be meas-

ured in dollars only. Rather, the profitability is measured by a profitability index (PI) which adjusts the dollar profitability for the equity investment necessary to earn the dollar return. That is, the PI measures the profitability of equity investment while reflecting the scale of the equity investment. Positive PI's reflect profitable industry investments while negative PI's reflect unprofitable investments. See Appendix 1 for the mathematical exposition of the model.

Table 2 shows the profitability of business investment, under the prior tax code and under the TRA, by industry. The calculations assume a four percent real rate of return and are simulated for inflation rates of zero percent, five percent and ten percent.

Table 2 reveals strikingly different impacts of the tax law change across industries with a five percent rate of inflation—mining, construction, manufacturing, and services prefer the TRA while agriculture and finance suffer the greatest losses in investment profitability from the TRA. Industry-specific factors (interest expense and income timing) cause the tax-code preference of some industries to change at higher rates of inflation, and therefore, higher rates of interest. Under zero inflation, the tax-code preferences are unchanged from those of five percent, but with a ten percent rate of inflation preferences of construction and services will switch to TEFRA, and the preference of agriculture switches to the TRA. Hence, with a ten percent rate of inflation, only agriculture, mining, and manufacturing prefer the TRA.

STATE AND REGIONAL EFFECTS

The impact of the change on Arkansas and the Southeast Region of the U.S. depends, also, upon the industry composition of the state and region. The Southeast Region comprises Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia.

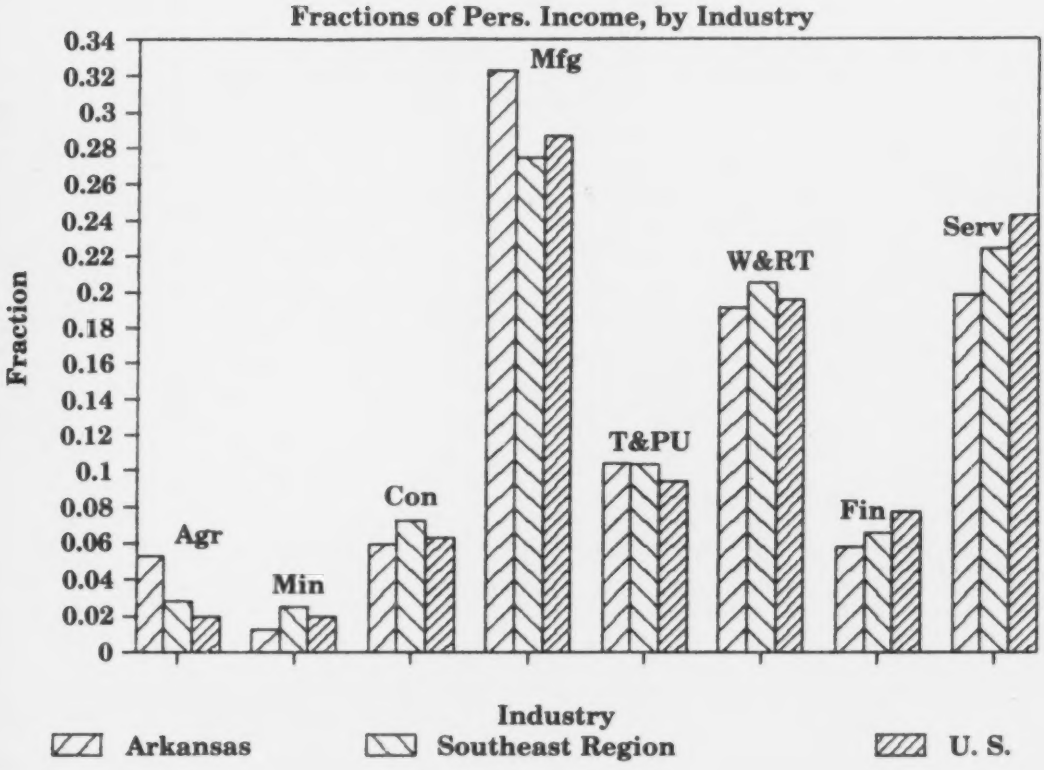
The industry compositions of Arkansas, the Southeast Region, and the U.S. are shown in Figure 1.[4] The percent of personal income derived from industries is Department of Commerce data. This data is consistent with the most currently available IRS data used in the previous industry profitability calculations.

The distribution of income derived from industries (Figure 1) is clearly different in Arkansas than in the Southeast Region or the U.S. The fraction of income from population-based industries, which would be

TABLE 2
SIMULATED PROFITABILITY INDEX OF EQUITY INVESTMENT, BY INDUSTRY

Inflation	Tax Code	Agriculture	Mining	Construction	Manufacturing	Trans. & Pub. Util.	Whsle. & Ret. Trade	Finance	Services
0%	TEFRA	1.60	−0.38	0.18	0.48	0.66	0.73	2.21	0.76
	TRA	0.32	−0.19	0.41	0.57	0.54	0.67	1.87	0.86
	Change	−1.277	0.189	0.231	0.088	−0.123	−0.059	−0.339	0.101
5%	TEFRA	0.12	−0.98	−0.11	0.18	0.40	0.29	1.47	0.38
	TRA	−0.12	−0.44	−0.03	0.24	0.30	0.24	1.21	0.40
	Change	−0.244	0.536	0.079	0.055	−0.101	−0.045	−0.260	0.020
10%	TEFRA	−0.99	−1.42	−0.32	−0.05	0.18	−0.05	0.91	0.07
	TRA	−0.46	−0.64	−0.36	−0.02	0.09	−0.08	0.71	0.03
	Change	0.523	0.788	−0.036	0.029	−0.086	−0.034	−0.200	−0.041

FIGURE 1
INDUSTRY COMPOSITION



expected to be most similar to the region and the U.S., is surprisingly dissimilar. That is, while Arkansas and the Southeast have roughly the same income concentration in transportation and public utilities, and in wholesale and retail trade, the fraction of personal income derived from the finance and especially the services industry is, surprisingly, below that of the region and the U.S. The figure also reveals the importance of the manufacturing, and agriculture sectors to Arkansas relative to the region and country as a whole.

STATE AND REGIONAL IMPACTS ON BUSINESS PROFITABILITY

To examine the impact of the TRA on Arkansas and the Southeast region, the industry profitability effects (Table 2) are weighted by the industry compositions (Figure 1) of the State and Region, respectively. This procedure produces an average PI of equity investment, under TEFRA, to an average regional investment across industries; an average PI of equity investment, under the TRA, to a regional investment; and the tax-related change in the average PI of a regional investment. The industry-weighted impact of the TRA is shown in Table 3.

The profitability of business investment in Arkansas, under TEFRA, was higher than that of the Southeast Region but not the U.S. under a zero percent inflation scenario. Otherwise, under a five percent and ten percent inflation scenario, the average equity investment in Arkansas lags

TABLE 3
SIMULATED PROFITABILITY INDEX OF EQUITY INVESTMENT OF STATE, REGION, NATION

Inflation	Tax Code	Arkansas	Southeast Region	U.S.
0%	TEFRA	0.732805	0.715413	0.734544
	TRA	0.686630	0.700754	0.727600
	Change	−0.0462	−0.0147	−0.00694
5%	TEFRA	0.302253	0.302513	0.326700
	TRA	0.288662	0.297665	0.319821
	Change	−0.0136	−0.0048	−0.00687
10%	TEFRA	−0.02952	−0.01630	0.011476
	TRA	−0.01968	−0.01469	0.003845
	Change	0.0098	0.0016	−0.00763

behind the Southeast Region and the U.S. under TEFRA. The TRA, however, reduces equity investment profitability in Arkansas relatively more than in the Southeast Region or the U.S., under zero percent and five percent inflation scenario. In the case of a ten percent inflation scenario, Arkansas and the Southeast Region benefit from enactment of the TRA as opposed to the lower business investment PI to the country as a whole regardless of the inflation rate.

Higher inflation is not preferred by Arkansas, the Southeast Region, or the U.S. because higher inflation reduces profitability under either TEFRA or the TRA. That is, once a tax code is chosen, inflation reduces profitability. In general, however, the conclusions from Table 3 are insensitive to inflation changes for the Southeast Region and the U.S. Indeed, the change in equity profitability caused by the TRA is less inflation sensitive in the Southeast Region than in any other region of the country. However, Arkansas' preference for a particular tax code is dependent on the inflation rate.

CONCLUSIONS

The Tax Reform Act of 1986 reduces the profitability of equity investments in most industries. The reduction, however, is different for different industries, so the TRA is not industry-neutral. The profitability of an average equity investment in Arkansas is reduced under both a zero percent and five percent inflation scenario. Further, the profitability of an average equity investment in Arkansas is reduced relatively more than that of the Southeast Region and the U.S. because of Arkansas' relatively higher concentration of industries treated relatively unfavorably by the TRA. However, when the inflation scenario is ten percent, Arkansas' tax code preference switches to the TRA. Therefore, the business investment climate of Arkansas suffers when compared to the Southeast Region and the U.S., except when the inflation scenario is high.

[1]Chang-Yin Lin, "An Analysis of Regional Investment in Response to Relative Rate of Return for Arkansas," *Arkansas Business and Economic Review*, Vol. 18, No. 4, 1985, pp. 1-7.

[2]*A Complete Guide to the Tax Reform Act of 1986*, New Jersey, Prentice-Hall Information Services, 1986; and *Prentice-Hall's Explanation of the Tax Reform Act of 1986*, New Jersey, Prentice-Hall Information Services, 1986.

[3]Internal Revenue Service, *Statistics of Income—1983 Corporation Income Tax Returns*, Washington, D.C., U.S. Government Printing Office, 1986.

[4]U.S. Department of Commerce, *Local Area Personal Income 1979-84*, Bureau of Economic Analysis, August 1986.

APPENDIX 1

THE MODEL

The model discussed in this section provides a framework for evaluating the impacts of tax change proposals or enactments across industries. The model is designed to assess the effects of tax law changes on the profitability of capital investment to equity (common stock) participants, and, therefore, on the ability of the firm to attract equity capital.

The basic logic of the model is to view the investment process as being comprised of the following stages: the acquisition of funds; the division of the investment of funds into depreciable, depletable, and working capital assets; the generation of operating cash flows; and the termination of the investment.

The acquisition of investment funds, firms' debt ratios are assumed to remain constant. That is, the fraction of new investments which is funded from debt sources is the same as the fraction of the firm presently funded from debt sources. Further, the ratio of interest-bearing debt to total debt remains unchanged, so the fractions of the investment funded by interest-bearing debt and free debt are assumed to be the same as the fractions of the firm currently funded from those sources.

The ratio of depreciable assets to total assets and the ratio of depletable assets to total assets also remain constant. Therefore, the investment is divided into depreciable and nondepreciable assets in the same fractions as currently shown in corporations' balance sheets. The investment is also divided into depletable and nondepletable assets in the same fractions as currently exist. Hence, only the equity portion of the investment gives rise to equity investment, only the interest-bearing debt portion of the investment gives rise to interest expense, only the depreciable asset fraction generates depreciation expense, and only the depletable asset fraction causes depletion expense. The remainder of the investment funding is from non-interest bearing debt, and the remainder of the investment is in nondepreciable-nondepletable assets, i.e., working capital.

Similarly, the ratio of before-tax earnings to firms' total assets (pre-tax return on assets) is assumed to be unaffected by corporate tax provisions and, therefore, constant.

In short, the model assumptions allow the computation of a series of *ex post* after-tax cash flows to equity from a *ceteris paribus* investment in the firm and the net present value (discounted present value of all cash flows), to the equity investment. The profitability index (PI) of the equity investment is the equity NPV divided by equity investment. The PI measures the relative profitability to equity reflecting the scale of the equity investment, with positive PI's indicating positive NPV's. The model is not dynamic because it disregards tax revision induced behavioral changes, and the model is not suitable for *ex ante* investment decision making because it combines investment and financing cash flows.

The profitability index of the equity investment in industry i under the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA), the prior tax code, can be determined from equations 1 and 2 below:

$$PI_i = NPV_i/[I(NW/A)_i], \text{ where} \tag{1}$$

$$NPV_i = -I(NW/A)_i + \sum_{t=1}^{CL+1} I(EBIT/A)_i\,(1-TX_i)(1+r)^{-t} - \sum_{t=1}^{CL+1} I(ID/A)_i\,(r)(1-TX_i)(1+r)^{-t}$$

$$+ \sum_{t=1}^{CL} I(ACRS_t)(1 - .5ITC)(DA/A)_i (1+r)^{-t}$$

$$+ I(ITC)(DA/A)_i$$

$$+ \sum_{t=1}^{CL} I(DE/A)_i (1+r)^{-t} + I[1-(CL)(DE/A)_i] (1+r)^{-(CL+1)}$$

$$+ I[1-(DA/A)_i - (DPA/A)_i] (1+r)^{-(CL+1)}$$

$$- I(D/A)_i (1+r)^{-(CL+1)}, \qquad (2)$$

and where NPV is the net present value to the equity investment;

i is industry;

I is the dollar investment;

NW/A is the net worth to assets ratio;

EBIT/A is the earnings before interest and taxes to assets ratio;

TX is the effective tax rate paid on income;

r is the nominal interest rate;

CL is the years of ACRS class life;

ID/A is the ratio of interest-bearing debt to assets;

ACRS is the ACRS recovery rate for year t of recovery;

ITC is the maximum allowable ITC rate under the ACRS (6 percent on class I assets, otherwise 10 percent);

DA/A is depreciable assets to total assets ratio;

DE/A is the depletion expense to total assets ratio;

DPA/A is the depletable assets to total assets ratio; and

D/A is the debt, including noninterest-bearing, to total assets ratio.

The left-hand term of equation 2 is the net present value to an equity investment in industry i. The first term on the right-hand side is the equity portion of the total investment. The second term on the right-hand side is the discounted present value of the after-tax operating earnings, and the third term is the discounted present value of the after-tax cost of interest payments. While the ACRS recovery is completed in the class life, the asset(s) generate income, and therefore, interest expense, into the following period. The fourth term is the discounted present value of the depreciation (assuming that the industry claims the maximum ITC and reduces the depreciable base of the depreciable asset(s) by one-half of the ITC), and the fifth term is the ITC. The sixth and seventh terms are the discounted present value of the depletion expense. The rate of depletion is such that the depletable asset portion of the investment would not be completely depleted in (CL) years, there-

fore, the seventh term is required to deplete the remaining portion in year (CL+1).

The eighth term is the discounted present value of "cashing out" of the nondepreciable and nondepletable investment, and the last term is the discounted present value of the debt repayment. The last two terms are necessary to terminate the investment.

The PI of the equity investment in industry i under the Tax Reform Act of 1986, the new tax code, can be determined from equations 3 and 4 below:

$$PI_i' = NPV_i'/[I(NW/A)_i], \text{ where} \tag{3}$$

$$\begin{aligned} NPV_i' = & - I(NW/A)_i + \sum_{t=1}^{CL+1} I(EBIT/A)_i\,(1-TX')_i\,(1+r)^{-t} \\ & - \sum_{t=1}^{CL+1} I(ID/A)_i\,(r)(1-TX')_i\,(1+r)^{-t} \\ & + \sum_{t=1}^{CL+1} I(ACRS_t')(DA/A)_i\,(1+r)^{-t} \\ & + \sum_{t=1}^{CL} I(DE/A)_i\,(1+r)^{-t} + I[1-(CL)(DE/A)_i]\,(1+r)^{-(CL+1)} \\ & + I[1-(DA/A)_i - (DPA/A)_i]\,(1+r)^{-(CL+1)} \\ & - I(D/A)_i\,(1+r)^{-(CL+1)}, \end{aligned} \tag{4}$$

and where the prime (′) indicates a new parameter value under the TRA.

The Tax Reform Act of 1986 changes the corporate income tax rate (TX′) and the depreciation schedule (ACRS′). The ITC has been eliminated from Equation 4, and the recovery is extended into period (CL+1). The model ignores the "transition rules" for 1987, and therefore, describes post-transition returns.

THE TAX REFORM ACT OF 1986 AND THE SMALL REAL ESTATE INVESTOR

Phillip E. Fincher[1]
Associate Professor of Economics and Finance
Louisiana Tech University

David E. Letourneau
Doctoral Candidate
Louisiana Tech University

INTRODUCTION

The effect of the Tax Reform Act of 1986 on an individual taxpayer depends on a number of factors. Three major factors are the extent of one's investments in real estate, tax deductions not related to real estate, and one's marginal tax bracket. This article examines the effect of the tax reform on two sets of individuals: (1) those who only own one residence, and (2) those who own a residence and rental property. In general, the conclusions indicate that the relatively small real estate investor is only minimally affected by the new law.

In Section I the effects of lower tax rates and higher standard deductions on all taxpayers are considered. Section II examines the potential effect of the increased standard deduction on the tax benefits of home ownership. The Tax Reform Act of 1986 affected rental property values in five important areas: (1) changes in the treatment of depreciation of property, (2) changes in capital gains treatment, (3) changes in how losses may be offset against other income, (4) at-risk rule changes, and (5) changes in the computation of alternative minimum tax. The tax implications of depreciation treatment are examined in Section III. Section IV looks at changes in capital gains; Section V discusses income offsets; and Section VI explains the at-risk rules. Section VII briefly looks at changes in the alternative minimum tax. The authors' conclusions are in Section VIII.

I. TAX EFFECT ON HOMEOWNERS

Tax Rates Are Reduced

The top marginal tax rate of an individual with an income of $50,000 will drop from 50 percent in 1986 to 38.5 percent in 1987, and to 28 percent in 1988. The number of tax brackets is reduced from 15 in 1986, to 5 in 1987, and 2 in 1988. When fully implemented, the individual will pay 15 percent on the first $29,750 of taxable income and 28 percent on the balance of taxable income.

Standard and Personal Deductions Are Increased

Over a three-year period the standard deduction for an individual increases from $3,670 to $5,000 while personal exemptions increase from $1,080 to $2,000. Table 1 summarizes the changes in tax rates, deductions, and personal exemptions. Increasing the deductions and exemptions enhances the effect of the lower tax rates by lowering taxable income. For instance, under pre-1987 tax law, a family of four with an adjusted gross income of $30,000, a standard deduction of $3,760, and a personal exemption of $4,320 (4 × 1,080) would have had a taxable income of $22,010 and a marginal tax rate of 22 percent. In 1988, the same family will have a $5,000 standard deduction, $7,800 in personal exemptions, and will have taxable

TABLE 1
SELECTED TAX CHANGES AFFECTING THE INDIVIDUAL TAXPAYER

	1986	1987	1988	1989
Top Tax Rate	50%	38.5%	28%	28%
Standard Deduction	3,670	3,760	5,000	5,000
Personal Exemption (each)	1,080	1,900	1,950	2,000

income of only $17,200 with a marginal tax rate of 15 percent.

For a family of four filing a return with only the standard deduction and having a taxable income of either $30,000 or $45,000, the effects of the lower tax rate, higher standard deduction, and higher personal exemption are demonstrated in Table 2. Over the period 1986 to 1988 the $45,000 income earner lowers his Federal tax (increases his disposable income) by $1,353 (6,501 − 5,148). Clearly the salaried taxpayer receives some benefit from the new tax law. However, the benefit is affected by the act's treatment of interest.

Consumer Interest is Phased-Out

During Congress' early deliberations there was some support for completely disallowing the deduction of interest. A compromise was reached that allows the deduction of mortgage interest on up to two homes, while phasing out the deductibility of consumer interest. Consumer interest includes interest paid on such items as credit card charges and car payments. In 1987 only 65 percent of consumer interest is deductible. In 1988 deductibility of consumer interest falls to 40 percent, 20 percent in 1989, 10 percent in 1990, and zero percent in 1991.

Mortgage Interest is Fully Deductible

Mortgage interest on two homes is fully deductible, but the benefit of deduction is reduced because the tax rate is lower. For instance, the high-income homeowner who purchased a $100,000 home in 1981 at 9 percent interest for 20 years will, for the period 1986-88, have a real estate related interest deduction in excess of $8,000. At a 50 percent tax rate, the federal government subsidizes $4,000 of his interest (.5 × 8,000 = 4,000). So, the after-tax cost of interest on the home is only $4,000. At the rate of 28 percent, the government subsidy on $8,000 in interest is $2,240 (8,000 × .28 = 2,240), or $1,760 less than at the higher tax rate (4,000 − 2,240 = 1,760).

Of course, the effect on individuals in lower tax brackets is smaller. As Table 3 shows, under the new law the homeowner

TABLE 2
THE EFFECT OF THE TAX REFORM ACT OF 1986 ON THE TAX BURDEN OF A MARRIED COUPLE WITH TWO CHILDREN FILING A JOINT RETURN

	1986		1987		1988	
Adjusted Gross Income	$30,000	45,000	30,000	45,000	30,000	45,000
Standard Deduction	3,670	3,670	3,760	3,760	5,000	5,000
Personal Exemption	4,320	4,320	7,600	7,600	7,800	7,800
Taxable Income	$22,010	37,010	18,640	33,640	17,200	32,200
Tax on $30,000	2,744		2,676		2,580	
Tax* on $45,000		6,501		5,659		5,148

*A 5% surtax applies between AGI of 71,900 and 150,000, which first reduces the benefit of the 15% rate, and then reclaims the tax benefit of personal and dependent deductions.

earning gross income of $30,000 will be only $20 worse off overall under the new tax laws. But, the homeowner with gross earnings of $45,000 will be better off by $632 in 1987 and by $728 in 1988 even though the after-tax cost of his mortgage has increased by $625 (6,482 − 5,857). To isolate the effect of the lower tax rate on the interest deduction, it is assumed that the taxpayer has itemized deductions, other than mortgage interest, equal to the standard deduction. The net effect is that the taxable income from Table 3 is the taxable income of Table 2 reduced by $8,000 of real estate interest.

The last item in Table 3 isolates the after-tax cost of the mortgage interest to the homeowner in each of the three years. Less of the cost of borrowing is transferred to the government. Table 3 demonstrates that, in general, the homeowner has more spendable income (pays less in taxes) under the Tax Reform Act of 1986 than under prior law. The mortgage interest deduction provides less of a tax benefit, but the loss is more than overcome by the lower tax rate on general income.

II. THE EFFECT OF STANDARD DEDUCTION INCREASES ON HOME OWNERSHIP

Deductions May Affect Benefit of Mortgage Interest

The above example shows the minimum impact which the new tax law will have on the after-tax cost of mortgage interest. To take full advantage of the real estate interest deduction, the taxpayer must have itemized deductions, other than mortgage interest, at least equal to the standard deduction allowed all taxpayers.

In 1987 every taxpayer (married filing joint) is allowed a standard deduction of $3,760, ninety dollars more than in 1986. To the extent that the taxpayer does not have non-real estate deductions totaling $3,760, the tax advantage of home purchasing is lost. For example, if a taxpayer had non-real estate related itemized deductions amounting to only $2,500, he would have to allot $1,260 of his real estate interest to reach the standard deduction—for which he gets no tax benefit—before he could realize the tax benefits from his

TABLE 3
ISOLATING THE EFFECT OF LOWER TAX RATE ON THE MORTGAGE INTEREST DEDUCTION

	1986		1987		1988	
Adjusted Gross Income	$30,000	45,000	30,000	45,000	30,000	45,000
Taxable Income from Table 3	22,010	37,010	18,640	33,640	17,200	32,200
Mortgage Interest	8,000	8,000	8,000	8,000	8,000	8,000
Taxable Income	$14,010	29,010	10,640	25,640	9,200	24,200
Tax	1,360	4,358	1,476	3,726	1,380	3,630
Income Less Taxes & Interest (30K)	20,640		20,524		20,620	
Income Less Taxes & Interest (45K)		32,642		33,274		33,370
Net Change from 1986 (30K)	---		−116		−20	
Net Change from 1986 (45K)		---		+632		+728
*After-tax Cost of 8,000 Interest (30K)	6,616		6,800		6,800	
After-tax Cost of 8,000 Interest (45K)		5,857		6,067		6,482

*The after-tax cost of interest is computed as $8,000 less (tax from Table 2 minus tax from Table 3).
Example: $8,000 − (2,744 − 1,384) = $6,616.

remaining interest deduction. In effect, at the 28 percent tax rate, the government would only subsidize $1,890 of the high income taxpayer's interest ([8,000 − 1,250] × .28) as opposed to the maximum of $2,240 (8,000 × .28).

Effects of the $5,000 Standard Deduction

The after-tax cost of borrowing increases in 1988 when the standard deduction climbs to $5,000 and the allowable itemized deductions decrease. Among the changes in deductions are the following: the deductibility of consumer interest is lost, and deductibility of mortgage interest is limited to two homes; investment interest deductions are limited to the investor's investment; passive activity losses and IRA contributions are limited; and the non-deductible floor beneath medical deductions is raised. The overall result, and one of Congress' intentions, is to make itemizing less advantageous. For many taxpayers the increase in the standard deduction will, while not increasing their overall taxes, reduce the tax advantages specific to homeownership.

A Caveat on Circumventing the Rules

In an attempt to circumvent Congress' intent to eliminate consumer interest charges as a tax deduction, some individuals refinanced their homes, used the money to buy consumer goods, and expected to claim the interest paid on the home loan as a deduction. Oftentimes the house had appreciated considerably in value so that a home that cost $25,000 in the late '60s, for instance, might be refinanced for $75,000 in 1986.

Homeowners who are thinking of using this tactic should be aware that when Congress passed the new Act, they retroactively denied the deductibility of interest on primary residences to the extent that the mortgage exceeded the original cost of the home plus improvements. For example, if the original cost of a home was $25,000, and if a room were added at a cost of $12,000, interest on a refinanced mortgage would be deductible to the extent that the new mortgage did not exceed $37,000. Similarly, interest on second residences are denied deductibility to the extent that the debt exceeds the market value of the home. Debt incurred prior to August 16, 1986, and secured by a residence is free from the restrictions cited above.

Exceptions for both homes are made for funds used for educational or medical purposes or for home improvements. Assume, in the example above, that the home had been refinanced for $50,000 or $13,000 above the original cost plus improvements. If the $13,000 was used to pay college tuition or medical expenses, the mortgage interest associated with that $13,000 would be deductible. One other stipulation is that the new mortgage (in the example, $50,000) must not be higher than the market value of the home.

III. THE HOMEOWNER WITH ONE RESIDENTIAL UNIT

New Depreciation Rules

Recovery of investment (depreciation) in real or personal property is controlled by the Internal Revenue Code's accelerated cost recovery system (ACRS). In 1981 real estate could be depreciated over 15 years at accelerated rates of 175 percent of the declining balance. By 1985 the rules were modified to straight-line depreciation over 19 years for residential property. After December 31, 1986, real property must be depreciated using straight-line depreciation over a period not less than 27.5 years for residential property or 31.5 years for nonresidential property.

Table 4 demonstrates the impact of Congress' actions on the deduction of residential real estate depreciation. The table compares maximum depreciation allowances over 15 years from a residential

TABLE 4
COMPARISON OF DEPRECIATION ALLOWANCES FOR THE FIRST 15 YEARS OF RESIDENTIAL REAL ESTATE TAX LIFE UNDER THREE RECENT LAWS

Years	(1) 1981 15 Yrs., 175% Declining Balance	(2) 1985-1986 19 Yr., S/L	(3) Post-1986 27.5 Yr., S/L
1	$12,000	$5,000	$3,480
2	10,000	5,300	3,640
3	9,000	"	"
4	8,000	"	"
5	7,000	"	"
6	6,000	"	"
7	"	"	"
8	"	"	"
9	"	"	"
10	5,000	"	"
11	"	"	"
12	"	"	"
13	"	"	"
14	"	5,200	"
15	"	"	"
Depr. for 15 Yrs.	$100,000	$84,300	$54,440

property with a $100,000 depreciable basis for each of the three time-frames mentioned above. Even at the new lower maximum tax rate of 28 percent, the tax burden over the first fifteen years of the asset's life increases by nearly $8,400 ([84,300 − 54,400] × .28 = 8,400).

Depreciation of Improvements to Property

Depreciation rules also affect improvements to the property. Depreciation on new additions or improvements to property is identical to that of the underlying property. Additions to residential property made in 1987 are depreciated over 27.5 years beginning in 1987 even though the property may already be 20 years old.

The Effect of the Combined Depreciation and Tax Rate Changes

Table 5 takes a $100,000 residential rental property and the effects of the old and new depreciation and tax rates on the cash flow from a residential rental property over the first 5 years of ownership. There are two scenarios presented: one in which the property generates losses, and the other where it produces profit.

Discouraging Tax Shelter Investment

The loss scenario of Table 5 would normally represent the investor whose primary objective in real estate investment is to produce losses to be used to offset income from other sources—an investor in tax shelters. A primary goal of the tax reform act is to discourage such investments. Indeed, in our example, a 40 percent reduction in cash flow (from $31,000 to 18,500) should be a step toward that end.

Moderate Effects on the Small Investor

The second and profitable scenario represents the average small investor whose goal is to provide profits to supplement income from other sources. Here, the Tax Reform Act of 1986 has little impact on

TABLE 5
THE EFFECTS OF DEPRECIATION TAX RATES ON A RENTAL PROPERTY OVER THE FIRST FIVE YEARS OF OWNERSHIP

Cost of Rental Property				$100,000
Revenue, Depreciation, and Expenses for a Five-Year Period				
	Loss Scenario		Profit Scenario	
	1985-1986 Tax Law	New Law	1985-1986 Tax Law	New Law
Rental Income	$72,000	$72,000	$90,000	$90,000
Depreciation	(26,200)	(18,040)	(26,200)	(18,040)
Related Expenses	(12,000)	(12,000)	(10,000)	(10,000)
Interest on Mortgage	(43,000)	(43,000)	(43,000)	(43,000)
Before Tax Loss	($9,200)	(1,040)		
Before Tax Profit			10,800	18,960
Tax at 50 Percent			5,400	
Tax at 28 Percent				5,309
Cash Flow from Operations	0	0	5,400	13,651
Tax Savings at 50% Rate	4,600	520		
Depreciation	26,200	18,040	26,200	18,040
Total Cash Flow	$30,800	$18,560	$31,600	$31,691

cash flow. The two cash flows are within 3/10th of 1 percent of each other. Congress has accomplished an admirable feat—it has narrowed an abused loophole while not significantly affecting the small real estate investor.

IV. MODERATE EFFECTS ON CAPITAL GAINS

After-tax profit from a residential unit is also affected by altered treatment of capital gains under the Act. Capital gains is the net receipts from the sale of the house, less the basis in the home (usually, the purchase price plus the costs of improvements). Prior law excluded 60 percent of the capital gain and taxed the remainder at a maximum rate of 50 percent. This made the effective tax rate on capital gains to be 20 percent (40% × 50%). Under the revised law, the individual will be taxed on the entire capital gain at a rate not exceeding 28 percent. The increase in the capital gains tax from 20 to 28 percent represents a 40 percent increase in the tax rate. While the tax rate on the before tax gain is higher, the lower rate of depreciation works to reduce the amount on which the tax is paid. The two effects tend to offset each other. Using the same property considered in Table 5, Table 6 demonstrates this phenomenon on the profits from sale after 5 years. Assume that the property has appreciated at approximately 2 percent per year to $110,400.

In the example given in Table 6, the effects of new capital gains treatment and longer depreciation come within $130 of canceling each other. The specific effect of the changes on a property will depend on the period held, with the maximum difference coming when the properties are held for 19 years. At that point the seller enjoys $3,000 less in cash receipts from the sale under the new law. If a property is held beyond 19 years the difference in cash receipts narrows. Under the new rules the property continues to be depreciated for an additional 8.5 years. The depreciation decreases taxes and thereby increases

TABLE 6
PROFIT FROM SALE OF HOME AFTER FIVE YEARS

Sale Price			$110,400
Selling Expenses			6,400
Net Receipts from Sale			$104,000
	Pre '87 Tax Law	New Tax Law	
Net Selling Price	104,000	104,000	
Basis (Cost Less Depreciation)	(73,800)	(81,960)	
Gross Profit	30,200	22,040	
Tax (20% Before '87, 28% After)	(6,040)	(6,171)	
After Tax Profit from Sale	$24,160	$15,869	
Basis	73,800	81,960	
Cash Receipts from Sale, Less Taxes	$97,960	$97,829	

cash receipts over those from a similar fully depreciated property.

V. PASSIVE ACTIVITY LOSSES

Congress' Target

Another facet of the new tax law is the treatment of passive losses. The change is aimed primarily at the large scale investor in real estate, but the smaller scale investor should be aware of the potential impact as his real estate investments grow. Before discussing passive losses specifically, a brief look at Congress' intent is in order.

Prior to the passage of the Act, some real estate transactions occurred primarily because of the tax benefits rather than for valid economic reasons. For instance, it was possible to invest in tax shelters that generated losses, largely through the use of accelerated depreciation, and to use those losses to offset gains from other types of income thereby decreasing taxes. The result was that many high income taxpayers paid little tax, a situation perceived as unfair by all but the high income taxpayers. The overall goal of the new tax law is to eliminate this inequity by removing tax incentives for real estate investment.

Reducing Tax Shelter Effectiveness

The real estate loopholes, often called tax shelters, are made less effective in generating tax savings in several major ways: First, across-the-board tax cuts make tax write-offs generally less profitable. Second, cost recovery time for real estate investments is lengthened; that is, depreciation takes longer. Third, stringent rules limit the use of real estate losses to offset gains from other sources. Fourth, higher minimum taxes and the addition of certain tax preferences to the computation of an Alternative Minimum Tax reinforce the effect of tax cuts.

Definition of Passive Activity

A major weapon in Congress' war to achieve equitable taxation is the partial prohibition of offsetting non-real estate gains with real estate losses. This is accomplished, in part, by the definition of "passive activity." Section 409(c) of the Internal Revenue Code defines passive activity as (1) an activity involving the conduct of any trade or business in which the taxpayer does not materially participate, such as a limited partnership, and (2) *any* rental activity. In the new Act, all income is determined to come from one of three sources: (1) income from passive activities such as limited partnerships or *rental activities*, (2) active income such as salaries,

or (3) portfolio income such as dividends or interest.

Tax Effects of Passive Activity Losses

Passive activity losses can only be used to offset passive gains. Passive activity losses occur when rental losses are larger than rental income. Qualified residence interest expenses are excluded from the computation. Passive losses that cannot be utilized in the current year may be carried forward indefinitely. However, if the taxpayer divests himself of the entire passive activity, any losses incurred can be used to offset other income. For instance, assume that a high income investor owns a group of apartment buildings that have suddenly become 75 percent vacant due to local pollution. The situation could be expected to generate large passive activity losses. If the investor did not have other passive activity (rental) gains, he would have to carry his losses into the future to offset future passive activity gains. If instead the owner sells the property, he may use the passive activity losses as he would any other losses to reduce high ta- ble gain (or increase his loss) from the e. Passive activity losses from an ongo. vestment cannot be applied to other income of individuals, estates, trusts, or personal service corporations.

Phase-In of the Passive Activity Disallowance

The law is phased-in over five years. In 1987, 65 percent of the excess of passive activity losses over gains will be allowed. The percentage allowed decreases to 40 percent in 1988, 20 percent in 1989, 10 ercent in 1990, and zero in 1991. What his means to some investors is that if ental operations generate losses overall, hose losses cannot reduce the tax bite on alaries or earnings from stocks and onds.

Passive Activity Relief for the Small Investor

A *major exception* is made for an individual (not a corporation) who may offset up to $25,000 of other income with passive activity losses from rental activities in which they "actively" participate, and in which they own at least a 10 percent share. The active participation requirement can be met without regular continuous involvement as long as the taxpayer has significant management responsibilities or arranges for services.

Phase-Out of the Passive Activity Losses

For every dollar of adjusted gross income (AGI) above $100,000, the $25,000 offset is reduced by 50 cents. At an AGI of $125,000 only $12,500 of passive activity losses may be used to offset non-passive income. At $150,000 no passive activity losses may be used to offset other income. Therefore, the relatively small real estate investor retains an important benefit of the pre-1986 tax law.

Passive Activity Loss Effects on Cash Flow

Table 7 compares the tax effect on an individual assumed to be in the 28 percent tax bracket under three scenarios. Column (1) assumes $50,000 in passive activity losses under the pre-1987 tax code. Column (2) makes the same assumption under the new Act, and Column (3) compares an individual's tax who has no passive activity income. As can be seen from the figures, the ability to use passive activity losses to offset income from other sources is a valuable option. A significant number of individuals used the provision to reduce the tax burden on high incomes to zero. The new tax law successfully terminates this abuse on high income taxpayers while preserving the option for the small real estate investor. Two other provisions of the new tax code are of interest: at-risk rules, and the alternative minimum tax.

VI. AT-RISK RULES

At-risk rules are changed and will have significant effects on real estate transac-

TABLE 7
COMPARATIVE TAX IMPACT FROM PASSIVE REAL ESTATE ACTIVITY

	(1)	(2)	(3)
Passive Activity Losses	$50,000	$50,000	$0
Taxable Income (Salary Interest, etc.)	100,000	100,000	100,000
Allowable Passive Activity Losses	(50,000)	(25,000)	---
Taxable Income	50,000	75,000	100,000
Federal Taxes (28 Percent)	14,000*	21,000	28,000
	36,000	54,000	72,000
Add Passive Activity Loss	50,000	25,000	---
Disposable Income	$86,000	$79,000	$72,000

*The maximum tax rate in 1986 was not 28 percent, but is used here to isolate the effect of passive activity.

tions meant primarily to be tax shelters, but should not have much effect on the small real estate investor. The at-risk rules are designed to prevent the investor from taking as a loss, amounts greater than the actual economic investment (the amount at-risk) in the activity. The amount at-risk is generally defined to be the sum of the (1) cash contribution, (2) value of property contributed, and (3) amounts borrowed for which the investor is personally liable and for which he has pledged property not used in the activity. An investor would be considered at-risk for $200,000 in the case where he had paid $20,000 in cash for a property, transferred ownership of his $5,000 bass boat, and pledged jewelry worth $175,000 as collateral to secure the mortgage on the balance of the property.

Under the previous law, real estate was exempt from at-risk rules and, therefore, the investor could include in his basis a loan for which he had no personal liability—a loan secured only by the property. As a result, many real estate projects were financed with nonrecourse loans. Tax beneficial losses resulting from inflated cost recovery deductions could be generated without personal risk. The '86 Act repeals real estate's general exemption from these at-risk provisions.

However, when certain qualified nonrecourse loans are used to finance the purchase or building of property, the owner will still be considered at-risk whether or not the lender is an equity holder. The qualified nonrecourse loans are those from entities regularly engaged in making loans—such as a bank. Since small real estate investors usually use such financial resources, the new at-risk rules are of only passing interest.

VII. ALTERNATIVE MINIMUM TAX

A final consideration of the taxpayer is that he may be subject to the alternative minimum tax (AMT). Many high-income investors structure their investment portfolios so as to take advantage of tax preference items. Tax preference items such as accelerated and regular depreciation, passive activity losses, tax-free securities, donation of assets with inflated values, etc., have, in the past, allowed some individuals to earn large incomes while paying minuscule taxes. AMT limits the amount of tax preference items an individual (or a corporation) may take, and thereby helps assure that each citizen pays a fair share of taxes.

The most significant items added back to the regular taxable income to compute AMT are:

1. Depreciation. The taxpayer may choose to depreciate his residential prop-

erty either over 27.5 years, or over 40 years. The difference between the depreciation arrived at using the two methods is either added to regular taxable income if the 27.5-year alternative is used, or subtracted from regular taxable income if the 40-year alternative is used.

2. All passive activity losses, even those disallowed.

3. Gain on sale of some assets.

4. Several itemized deductions—state and local taxes, dues, real estate taxes, and other deductions.

5. All interest expense, except home mortgage interest and investment interest to the extent of net investment income.

6. Several others.

Once these adjustments are added back to regular taxable income, the individual may now reduce the total by up to $40,000 to arrive at AMTI—alternative minimum taxable income. This exception will nullify the effects of AMT for most small investors. The $40,000 exemption is reduced by 25 percent of the amount an individual's AMTI exceeds $150,000. For an AMTI of $250,000, there is no exemption. AMTI is multiplied by the 21 percent tax rate and the taxpayer pays the higher of the regular or the alternative minimum tax. There may be one final adjustment to the AMTI tax if the individual has certain minimum tax credits. A taxpayer having tax preference items may desire to consult with a tax professional.

VIII. CONCLUSIONS

In summary, the small real estate investor must be aware of numerous potential effects that the Tax Reform Act of 1986 could have on the financial outcome of his investments. However, for most small investors, the net effects will be minimal. One effect of the change on the homeowner is that, when looked at in isolation, the cost of home ownership has increased. But, the effect is counterbalanced by the benefits of a lower tax rate on all of his income. The small real estate investor will often enjoy a net gain from the new tax law. When additional residential units are added to the taxpayer's assets, the net effect of the new Act may be altered if losses are generated, or if tax preference items accumulate. The investor is cautioned to study the new rules, or to get expert advice, to determine the specific impact the new rules have on new or continuing real estate investments.

The Tax Reform Act of 1986 has a major impact on the investor in tax shelters. Congress' intent was to shut down such activities engaged in primarily for their tax benefits. So far the new law is causing significant activity as investors maneuver to establish a new most-favorable position. Whether the new law will be beneficial to the real estate industry or to the economy as a whole awaits the judgment of the future.

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[1]We wish to thank Angela Letourneau and John Glascock for comments on an earlier draft. Any remaining errors are ours.

SELECTED ARKANSAS AND U.S. ECONOMIC INDICATORS

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1988 – A SLOWER GROWTH RATE

Phillip Taylor
Director, Bureau of Business and Economic Research
University of Arkansas, Fayetteville

At the midpoint of 1988, the principal concern relating to the Arkansas economy is the impact of the drought and high temperatures on agriculture. With Cash Receipts from Farm Marketings in the first quarter near 1982 levels, the early outlook was for an end to the depressed situation in this sector. While increased commodity prices will offset some reductions in crop yields, it is too early to determine fully what success farmers will have in respect to production. Moreover, increased feed costs, possible heat losses, and increased competition from beef may reduce the profitability of poultry production. Continuing along these same lines, employment and earnings in the food-producing industry is likely to fall as a result of lowered output in those crops generally subject to further processing.

Waterborne Commerce on the Arkansas River, after increasing for four quarters, is likely to suffer a fate similar to, and partially because of, agriculture. Lower crop yields will reduce tonnage in the Fall. Low water levels along the Mississippi Waterway and the lower portion of the Arkansas River Navigation system have brought river-traffic movement to a near halt in late June.

While Total Employment has increased consistently for several months, similar growth in the Labor Force has resulted in only a modest, and inconsistent, drift downward in the unemployment rate from 8.1 percent to 7.6 percent. Moreover, only about fifteen percent of the new jobs are in Manufacturing Wage and Salary Employment. With the previously mentioned negative outlook for some portions of Food Processing, the usual seasonal gains in Manufacturing Employment are likely to be somewhat less over the next few months.

Early indications are that Industrial Production declined in the first quarter from the levels achieved in 1987. If the early indicators do prove to be correct and this sluggish level of performance continues, the outlook for 1988 will be somewhat below earlier projections.

Nationally, the growth in Personal Income appears to have slowed somewhat. That slower growth, along with the problems in Arkansas Agriculture, indicate we can expect a reduction in the rate of growth in Arkansas' Personal Income. If no growth occurs beyond that achieved in the last quarter of 1987, the level of Personal Income for the year (1988) would still reflect a growth rate of 1.5 percent. Growth beyond that is probable hence the outlook at this point is for increases in the 2 to 3 percent range.

In summary, growth in the Arkansas economy during 1988 is expected to be less than in 1987. This forecast is for *a reduction in the growth rate, not a downturn or recession*. Moreover, an abatement in the drought and high temperatures could createye a significant improvement in this scenario.

LABOR FORCE AND EMPLOYMENT

Arkansas

(Seasonally adjusted)

Year	Month	Civilian Labor Force (Units)	Total Employment (Units)	Agricultural Employment (Units)	Manufacturing Wage and Salary Employment (Units)	Unemployment Rate (Percent)
1980		999,000	923,000	65,100	210,050	7.7
1981		1,030,000	936,000	64,100	212,100	9.1
1982		1,018,000	919,000	63,440	195,625	9.8
1983		1,026,000	920,730	62,395	199,880	10.1
1984		1,044,000	951,000	61,600	209,750	8.9
1985*		1,051,000	960,000	46,250	210,317	8.6
1986		1,066,000	973,000	45,515	214,054	8.8
1987		1,088,000	1,000,000	45,000	219,000	8.1
	May	1,068,949	982,657	45,335	215,092	8.1
	Jun.	1,073,398	983,818	44,951	216,647	8.4
	Jul.	1,078,642	990,854	44,669	218,444	8.0
	Aug.	1,085,916	994,751	44,326	219,957	8.3
	Sep.	1,095,222	1,004,401	44,019	222,694	8.1
	Oct.	1,101,089	1,009,283	43,835	224,155	8.1
	Nov.	1,108,680	1,019,261	44,016	224,681	7.9
	Dec.	1,121,986	1,032,291	44,116	224,851	7.9
1988	Jan.	1,119,291	1,034,813	44,673	224,359	7.9
	Feb.	1,130,871	1,047,587	44,815	225,466	7.6
	Mar.	1,135,903	1,048,624	44,905	226,082	7.6
	Apr.	1,136,207	1,050,807	44,800	225,984	7.6

*Note: Labor Force and Employment data for the period 1985 forward have been reestimated by the Employment Security Division. The reestimation resulted in relatively large revisions in Agricultural Employment, with revisions to a less degree in Total Employment and Civilian Labor Force data. Consequently, the data for 1985 forward are not comparable to that for the prior period.

THE MINERAL INDUSTRY OF ARKANSAS IN 1987

The value of nonfuel mineral production in Arkansas in 1987 decreased nearly 4 percent to an estimated $253.4 million. Nationally, the State was a major producer of abrasives, bauxite, and bromine. Arkansas ranked 33rd in the Nation in the value of nonfuel minerals produced.

Arkansas' economy improved over 1986 as the unemployment rate dropped from 9.6 percent in January to 7.1 percent in September, the lowest rate since April 1980. Of the mineral related sectors, only primary metals manufacturing employment increased; employment in construction and mining decreased.

Output from bromine operations in southern Arkansas remained steady as demand nationally held firm. Great Lakes Chemical Corp. planned to construct a $20 million facility at El Dorado for the production of fluorine-based specialty chemicals. Construction started during the year with completion scheduled by mid-1988. Ethyl Corp., Magnolia, completed the purchase of the majority of the assets of Dow Chemical Co.'s bromine chemical business for about $50 million. Included were Dow's bromine facilities, brine field leases, distribution equipment, and bromine chemical patents.

In the metals sector, Nucor Corp. and Yamato Kogyo Co. Ltd. announced plans to build a 600,000-ton-per-year steel mill in Blytheville on the Mississippi River. The $175 million facility will produce large and medium sized structural shapes; completion is scheduled by late 1988. Century Tube Corp. completed a $9.5 million expansion at its Pine Bluff facility. Two additional tube mills were built to manufacture steel tubing. Commercial Metals Co. began operations at its rerolling mill in

TABLE 1
Nonfuel Mineral Production in Arkansas[1]

Minerals		1986 Quantity	1986 Value (thousands)	1987[p] Quantity	1987[p] Value (thousands)
Abrasives	short tons	W	W	649	$ 209
Clays[2]	thousand short tons	974	$ 8,998	975	$ 7,252
Gem stones		NA	522	NA	1,780
Sand and gravel:					
Construction	thousand short tons	e8,571	e26,999	e6,800	e21,100
Industrial	do	400	3,975	500	5,200
Stone:					
Crushed	do	e15,500	e58,500	14,200	59,800
Dimension	do	e5	e305	5	305
Combined value of bauxite, bromine, cement, clays (fire clay, (1986-87), gypsum, lime, talc and pyrophyllite, tripoli (1986-87), and values indicated by symbol W		XX	163,708	XX	157,766
Total		XX	$263,007	XX	$253,412

[e]Estimated. [p]Preliminary. NA-Not Available. W-Withheld to avoid disclosing company proprietary data, value included with "Combined value" figure. XX-Not applicable.

[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

[2]May exclude certain clays; values will be included with "Combined value" figure

Source: *Mineral Industries Surveys*, U.S. Department of the Interior, prepared by Tuscaloosa Regional Office of State Activities in cooperation with the Arkansas Geological Commission, January 1988.

Magnolia. The 60,000-ton-per-year mill will reroll rail into posts and other specialty products.

During the year the legislature passed a bill allowing commercial mining of diamonds at the Crater of Diamonds State Park. A Diamond Mining Advisory Task Force was appointed to study the feasibility of commercial mining coexisting with the operations of the State Park. The Task Force will present its recommendations to the Governor.

ARKANSAS LABOR FORCE ESTIMATES
May 1988, Not Seasonally Adjusted

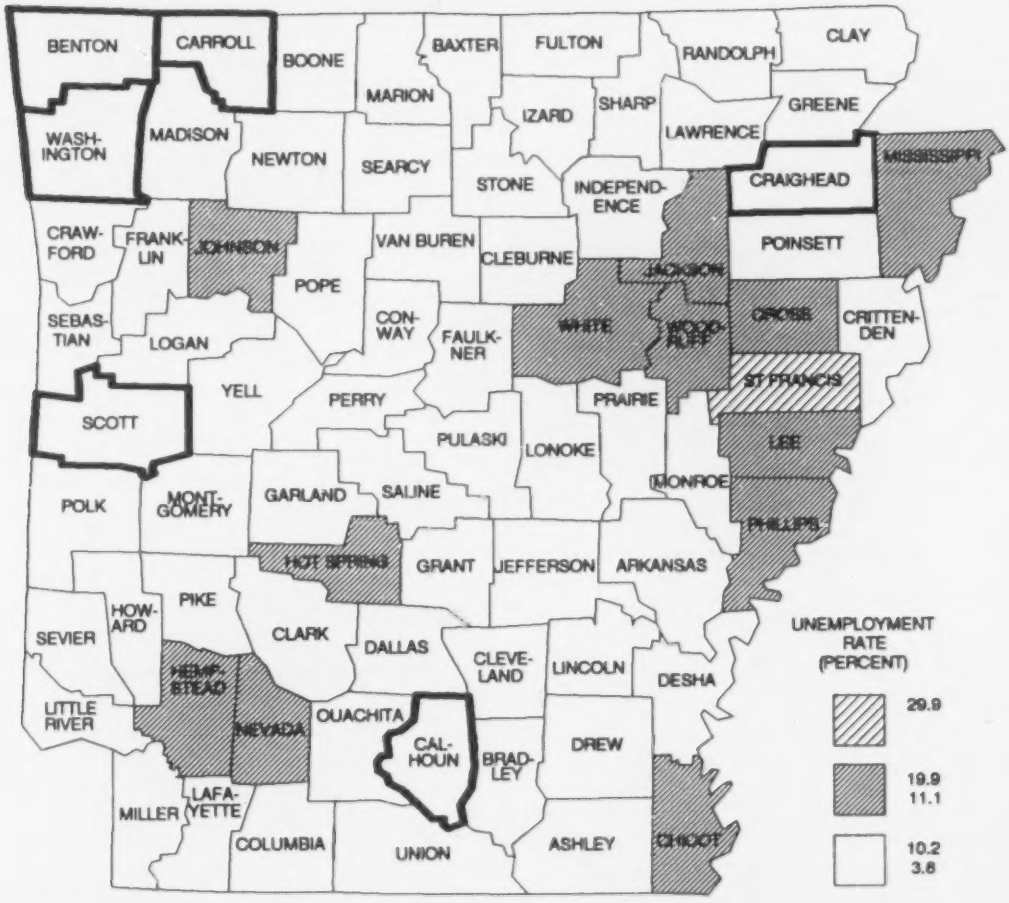
Area	Civilian Labor Force	Unemployment Rate	Total Employment
UNITED STATES	120,775,000	5.4	114,222,000
STATE OF ARKANSAS	1,138,200	7.8	1,049,900
Fayetteville-Springdale MSA	61,750	4.0	59,300
Fort Smith MSA	95,450	5.8	89,875
Little Rock-North Little Rock MSA	267,225	6.6	249,600
Pine Bluff MSA	37,700	8.1	34,650

County	Civilian Labor Force	Unemployment Rate	Total Employment	County	Civilian Labor Force	Unemployment Rate	Total Employment
Arkansas	10,725	6.5	10,025	Lee	5,025	19.9	4,025
Ashley	11,400	7.5	10,550	Lincoln	4,100	7.3	3,800
Baxter	11,550	8.0	10,625	Little River	5,225	8.6	4,775
Benton	51,875	4.0	49,825	Logan	9,400	7.7	8,675
Boone	15,425	6.2	14,475	Lonoke	17,450	6.0	16,400
Bradley	4,850	8.8	4,425	Madison	5,250	5.7	4,950
Calhoun	5,550	3.6	5,350	Marion	6,625	5.7	6,250
Carroll	10,875	4.8	10,350	Miller	18,225	8.9	16,600
Chicot	5,800	15.5	4,900	Mississippi	22,800	14.9	19,400
Clark	10,100	8.9	9,200	Monroe	5,125	9.8	4,625
Clay	8,725	7.2	8,100	Montgomery	3,100	8.9	2,825
Cleburne	8,450	6.8	7,875	Nevada	4,475	11.2	3,975
Cleveland	3,350	7.5	3,100	Newton	3,675	6.8	3,425
Columbia	12,300	7.3	11,400	Ouachita	13,725	8.6	12,550
Conway	8,025	8.4	7,350	Perry	4,400	7.4	4,075
Craighead	37,350	5.4	35,325	Phillips	10,250	12.9	8,925
Crawford	21,450	6.4	20,075	Pike	4,700	8.5	4,300
Crittenden	23,550	8.8	21,475	Poinsett	11,225	9.1	10,200
Cross	8,350	11.4	7,400	Polk	6,900	6.9	6,425
Dallas	4,500	7.2	4,175	Pope	24,350	6.8	22,700
Desha	7,600	10.2	6,825	Prairie	4,875	7.7	4,500
Drew	8,475	9.1	7,700	Pulaski	193,075	6.4	180,700
Faulkner	26,625	7.3	24,675	Randolph	7,575	9.6	6,850
Franklin	6,125	8.2	5,625	St. Francis	12,200	29.9	8,550
Fulton	4,075	9.2	3,700	Saline	30,075	7.5	27,825
Garland	32,350	8.9	29,475	Scott	5,975	4.6	5,700
Grant	6,300	7.5	5,825	Searcy	3,675	8.8	3,350
Greene	14,875	6.9	13,850	Sebastian	56,150	5.9	52,850
Hempstead	10,100	11.4	8,950	Sevier	6,600	6.8	6,150
Hot Spring	11,300	12.2	9,925	Sharp	6,200	6.9	5,775
Howard	6,150	6.9	5,725	Stone	4,025	6.8	3,750
Independence	16,125	8.5	14,750	Union	20,850	8.6	19,050
Izard	4,850	7.2	4,500	Van Buren	5,875	8.1	5,400
Jackson	8,700	15.2	7,375	Washington	61,750	4.0	59,300
Jefferson	37,700	8.1	34,650	White	26,000	11.1	23,125
Johnson	7,100	13.4	6,150	Woodruff	4,200	15.5	3,550
Lafayette	3,300	9.8	2,975	Yell	8,750	6.0	8,225
Lawrence	8,375	8.4	7,675				

Source: The Research and Statistics Section, Arkansas Employment Security Division, June 1988.

LABOR FORCE ESTIMATES
MAY 1988

In May, Arkansas' Civilian Labor Force grew by 9,700 to total 1,138,200. Total Employment grew 6,200 for a total of 1,049,900. As a result, unemployment grew by 3,500 to a level of 88,300. Of the 75 counties, Calhoun had the lowest unemployment rate, 3.6 percent, and St. Francis had the highest, 29.9 percent. Unemployment rates in 37 counties were below the state's 7.8 percent rate. In the MSAs, Fayetteville-Springdale had the lowest rate, 4.0 percent, and Pine Bluff had the highest, 8.1 percent. Rates for Fort Smith and Little Rock-North Little Rock MSAs were 5.8 and 6.6 percent, respectively.



Boundary lines of counties having an unemployment rate less than or equal to the national average of 5.4%

Bureau of Business and Economic Research
College of Business Administration
University of Arkansas
Fayetteville, Arkansas 72701

PERSONAL INCOME

Quarterly Changes in Personal Income, Arkansas and United States

(Seasonally adjusted, Percent)

	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV	1987 Q-IV thru 1988 Q-I
Arkansas	+ 1.2	+ 1.8	- 0.7	+ 0.9	+ 1.6	NA
United States	+ 1.1	+ 1.9	+ 1.3	+ 1.4	+ 2.5	+ 1.1

Personal Income in Arkansas

(Seasonally adjusted, annual rate, Millions of dollars)

	1980	1981	1982	1983	1984	1985	1986	1987
Quarter								
Jan-Mar	16,601[R]	18,648[R]	19,432[R]	20,729[R]	23,410[R]	25,008[R]	26,169[R]	26,995[R]
Apr-Jun	16,500[R]	19,088[R]	19,766[R]	21,134[R]	22,922[R]	24,517[R]	25,885[R]	26,813[R]
Jul-Sep	17,322[R]	19,534[R]	19,817[R]	20,898[R]	23,258[R]	24,688[R]	26,200[R]	27,056[R]
Oct-Dec	17,965[R]	19,290[R]	20,406[R]	21,871[R]	23,646[R]	25,169[R]	26,523[R]	27,497
Annual	17,097[R]	19,140[R]	19,855[R]	21,158[R]	23,309[R]	24,845[R]	26,194[R]	27,090

[R] Revised

INDUSTRIAL PRODUCTION

Quarterly Changes in Industrial Production Arkansas and United States

(Seasonally adjusted, Percent)

	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV	1987 Q-IV thru 1988 Q-I
Arkansas	+ 1.3	+ 1.1	+ 2.4	+ 1.9	- 7.8
United States	+ 0.7	+ 1.1	+ 2.1	+ 1.7	+ 1.0

Value Added by Manufacture in Arkansas

(Seasonally adjusted, annual rate, Millions of dollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	7,167.6	7,474.8	7,884.9	8,824.6	9,278.8	9,525.8	10,118.2[R]	9,839.7
Apr-Jun	7,388.1	7,569.1	8,131.9	8,959.7	9,282.1	9,661.5	10,234.1[R]	
Jul-Sep	7,601.8	7,581.8	8,398.0	9,078.2	9,351.9	9,758.6	10,475.5[R]	
Oct-Dec	7,589.5	7,746.9	8,522.0	9,165.2	9,425.3	9,984.0	10,670.5[R]	
Annual	7,436.8	7,593.2	8,234.2	9,006.9	9,334.5	9,732.5	10,374.6[R]	

[R] Revised

CASH RECEIPTS FROM FARM MARKETINGS

Quarterly Changes in Cash Receipts, Arkansas and United States

(Seasonally adjusted, Percent)

	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV	1987 Q-IV thru 1988 Q-I
Arkansas	- 8.9	- 10.4	+ 35.5	- 13.1	- 1.3	+ 18.6
United States	+ 6.5	- 0.6	+ 1.6	- 3.7	+ 3.7	NA

Cash Receipts from Farm Marketings in Arkansas

(Seasonally adjusted, annual rate, Thousands of dollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	3,004,163[R]	3,367,523[R]	2,703,185[R]	3,433,336[R]	3,332,255[R]	2,944,370[R]	2,490,661[R]	3,435,855
Apr-Jun	3,701,144[R]	3,668,744[R]	2,612,649[R]	3,319,057[R]	3,360,053[R]	2,771,831[R]	3,374,530[R]	
Jul-Sep	3,733,015[R]	2,779,477[R]	3,038,809[R]	3,224,298[R]	3,070,713[R]	3,053,423[R]	2,932,483[R]	
Oct-Dec	3,169,944[R]	3,262,372[R]	3,008,489[R]	3,217,101[R]	3,323,295[R]	2,781,179[R]	2,895,792	
Annual	3,402,066[R]	3,269,537[R]	2,840,783[R]	3,298,448[R]	3,271,579[R]	2,887,701[R]	2,923,367	

[R]Revised

WATERBORNE COMMERCE:
McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM

Quarterly Changes in Total and Internal Tonnages

(Seasonally adjusted, Percent)

	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV	1987 Q-IV thru 1988 Q-I
Total	- 4.1	- 1.3	+ 26.5	- 17.2	+ 7.5	+ 0.7
Internal	- 10.1	+ 23.3	+ 5.0	- 14.9	+ 14.0	- 25.6

Freight Traffic

(Seasonally adjusted, annual rate, Thousands of short tons)

Time Period		Traffic Tonnages			
		Inbound	Outbound	Internal	Total[1]
1979		2,026	3,456	2,932	8,926
1980		1,611	4,643	2,408	9,133
1981		1,564	5,684	1,741	9,446
1982		1,520	4,611	1,561	8,258
1983		1,918	3,905	1,904	8,017
1984		2,128	4,264	2,433	9,490
1985		2,103	3,191	2,521	8,335
1986		2,608	3,453	2,962	9,703
1987[2]		2,131	3,348	2,752	8,885
	Apr-Jun	2,107[R]	4,720[R]	2,935[R]	10,125[R]
	Jul-Sep	2,172[R]	3,072[R]	2,497[R]	8,383[R]
	Oct-Dec	2,231[R]	3,749[R]	2,847[R]	9,007[R]
1988					
	Jan-Mar	2,808	3,259	2,118	9,071

[1] Total tonnage includes "through traffic."
[2] Sum of quarters does not equal annual totals because of moving seasonal adjustment factors.
[R] Revised

ARKANSAS CONSTRUCTION CONTRACTS

Residential Construction Contracts

(Seasonally adjusted, annual rate, Thousands of dollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	717,612[R]	476,187[R]	831,974[R]	969,402[R]	770,219[R]	842,884[R]	652,950[R]	600,875
Apr-Jun	649,981[R]	603,575[R]	924,270[R]	975,481[R]	784,590[R]	651,928[R]	632,556[R]	
Jul-Sep	554,668[R]	700,788[R]	930,843[R]	930,327[R]	705,496[R]	763,760[R]	647,747[R]	
Oct-Dec	609,014[R]	811,514[R]	933,212[R]	797,304[R]	801,647[R]	701,708[R]	661,759[R]	
Annual	632,818[R]	648,016[R]	905,075[R]	918,128[R]	765,488[R]	742,570[R]	648,753[R]	

Nonresidential Construction Contracts

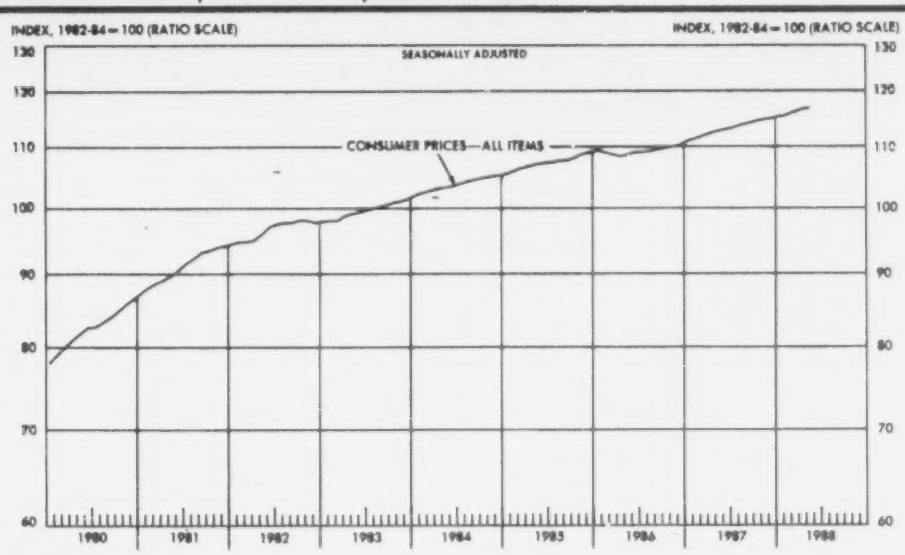
(Seasonally adjusted, annual rate, Thousands of dollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	363,356[R]	389,417[R]	286,833[R]	461,592[R]	386,837[R]	476,516[R]	400,391[R]	392,002
Apr-Jun	279,378[R]	212,698[R]	359,775[R]	444,186[R]	411,369[R]	328,485[R]	483,757[R]	
Jul-Sep	252,037[R]	306,050[R]	370,032[R]	507,932[R]	454,883[R]	541,870[R]	420,714[R]	
Oct-Dec	307,569[R]	213,596[R]	449,173[R]	450,036[R]	562,806[R]	311,998[R]	323,122[R]	
Annual	300,585[R]	280,440[R]	366,453[R]	465,937[R]	453,974[R]	414,717[R]	406,996[R]	

[R]Revised

CONSUMER PRICES—ALL URBAN CONSUMERS

In May the consumer price index for all urban consumers rose 0.3 percent, seasonally adjusted and not seasonally adjusted. The index was 3.9 percent above its year-earlier level.



SEE NOTE ON TABLE BELOW
SOURCE: DEPARTMENT OF LABOR

COUNCIL OF ECONOMIC ADVISERS

[1982–84 = 100, except as noted; monthly data seasonally adjusted, except as noted]

Period	All items [1]		Food	Housing					Fuel and other utilities	Apparel and upkeep	Transportation			Medical care	Energy [2]	All items less food, shelter, and energy
				Total [1]	Shelter						Total [1]	New cars	Motor fuel			
	Not seasonally adjusted (NSA)	Seasonally adjusted			Total	Renters' costs (Dec. 1982 = 100)	Homeowners' costs (Dec. 1982 = 100)	Maintenance and repairs (NSA)								
Rel. imp. [3]	100.0	.....	16.1	42.5	27.8	7.9	19.7	0.2	7.7	6.3	17.5	4.4	3.3	5.8	7.6	48.5
1980	82.4	.....	86.8	81.1	81.0	.....	.....	.....	82.4	75.4	90.9	83.1	88.4	97.4	74.9	86.0	80.6
1981	90.9	.....	93.6	90.4	90.5	.....	.....	.....	90.7	86.4	95.3	93.2	93.7	108.5	82.9	97.7	88.3
1982	96.5	.....	97.4	96.9	96.9	.....	.....	.....	96.4	94.9	97.8	97.0	97.4	102.8	92.5	99.2	95.1
1983	99.6	.....	99.4	99.5	99.1	103.0	102.5	99.9	99.9	100.2	100.2	99.3	99.9	99.4	100.6	99.9	100.0
1984	103.9	.....	103.2	103.6	104.0	108.6	107.3	103.7	104.8	102.1	103.7	102.8	97.9	106.8	100.9	105.0
1985	107.6	.....	105.6	107.7	109.8	115.4	113.1	106.5	106.5	105.0	106.4	106.1	98.7	113.5	101.6	109.0
1986	109.6	.....	109.0	110.9	115.8	121.9	119.4	107.9	104.1	105.9	102.3	110.6	77.1	122.0	88.2	112.7
1987	113.6	.....	113.5	114.2	121.3	128.1	124.8	111.8	103.0	110.6	105.4	114.6	80.2	130.1	88.6	117.0
1987: May	113.1	113.2	113.3	113.7	120.6	127.1	124.2	110.2	102.6	111.4	104.8	114.1	79.2	129.3	87.6	116.7
June	113.5	113.5	113.9	114.0	120.8	127.5	124.4	111.1	103.0	110.8	105.3	114.4	80.1	130.0	88.5	116.9
July	113.8	113.8	113.8	114.2	121.2	128.5	124.5	113.2	103.1	109.9	105.9	114.8	81.1	130.7	88.7	117.3
Aug	114.4	114.3	113.9	114.8	121.9	128.9	125.4	112.9	103.6	110.3	106.7	115.0	83.8	131.3	90.2	117.6
Sept	115.0	114.6	114.5	115.0	122.2	128.8	125.9	112.7	103.3	111.3	106.8	115.2	83.2	131.9	89.8	117.9
Oct	115.3	115.0	114.7	115.3	122.8	128.6	126.9	112.8	103.0	112.7	107.2	115.5	83.0	132.4	89.3	118.5
Nov	115.4	115.3	114.8	115.5	123.1	128.8	127.2	113.5	103.4	113.1	107.7	115.7	83.0	133.0	89.6	118.9
Dec	115.4	115.5	115.3	115.9	123.8	129.5	127.9	113.3	103.3	112.2	107.4	115.7	81.6	133.5	88.9	118.9
1988: Jan	115.7	115.9	115.6	116.4	124.5	130.9	128.4	113.7	103.2	112.3	107.3	115.5	80.4	134.6	88.3	119.5
Feb	116.0	116.1	115.3	116.8	125.1	131.5	129.0	114.3	103.7	112.0	107.1	115.8	78.9	135.1	87.8	119.8
Mar	116.5	116.7	115.7	117.2	125.7	133.0	129.3	113.3	103.5	114.2	107.2	116.2	79.2	136.0	87.8	120.4
Apr	117.1	117.2	116.5	117.5	125.8	132.6	129.6	115.3	104.0	116.5	107.5	116.2	80.1	136.8	88.5	121.1
May	117.5	117.6	117.0	117.8	126.2	132.8	130.0	114.3	103.9	116.5	108.2	116.4	81.5	137.7	88.9	121.5

[1] Includes items not shown separately.

[2] Household fuels—gas (piped), electricity, fuel oil, etc.—and motor fuel. Motor oil, coolant, etc. also included through 1982.

[3] Relative importance, December 1987.

NOTE.—Beginning with data for January 1988, the reference base was changed from 1967 = 100 to 1982–84 = 100.

Data beginning 1983 incorporate a rental equivalence measure for homeownership costs and therefore are not strictly comparable with figures for earlier periods.

Data beginning 1987 and 1988 calculated on a revised basis.

Source: Department of Labor, Bureau of Labor Statistics.

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1986-87

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1. Problems and issues of the Arkansas business community and economy;
2. Regional and industrial problems that have implications for the Arkansas economic community;
3. National business and economic issues of general interest to the people of Arkansas;
4. Business and economic theory; and
5. Articles of interest to both practitioners and academics in business.

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Arkansas Gross State Product: Estimates for 1960-1985[1]

Philip F. Rice
Professor of Quantitative Analysis
Louisiana Tech University

C. Michael Impson
Assistant Professor of Finance
North Texas State University

Introduction

Gross National Product (GNP) is a measure of the market value of all final goods and services produced in the United States. Quarterly and annual estimates of GNP prepared by the U.S. Department of Commerce are published on a regular basis and are widely distributed.

At the state level, no comparable measure of economic activity is prepared by the Department of Commerce. However, there are procedures that can be used to estimate Gross State Product (GSP), the market value of all final goods and services produced within a state. This paper presents estimates of Gross State Product for the state of Arkansas for the period 1960 through 1985. This represents an expansion of earlier estimates to include the period 1978-1985. The sector analysis is more detailed than in previous studies in that wholesale trade and retail trade are now distinct sectors. Also, agriculture-forestry-fisheries is now part of the private nonfarm category. In addition, the current estimates of GSP reflect revisions of the GNP estimates for the years 1947-1985 which were published in the April and July 1986 issues of the *Survey of Current Business*. Consequently, current GSP estimates may differ somewhat from previous GSP estimates.[2]

There are four major results from the studied period: (1) The Arkansas economy consistently outperformed the United States economy. (2) The fastest growing sectors were manufacturing, wholesale trade, transportation-public utilities, services, and finance-insurance-real estate. Conversely, there were large share losses in the farm, mining, and construction sectors in Arkansas. (3) The Arkansas GSP structure changed such that it more closely resembled the GNP structure by the end of the period. (4) Arkansas GSP and GNP tend to move in the same direction.

The estimates were prepared using the GSP estimation procedure developed by Kendrick and Jaycox[3] and revised by L'-Esperance, Nestel, and Fromm.[4] Basically, the procedure estimates the value added in the productive process in each of three sectors, private nonfarm, government, and farm. For the private nonfarm and government sectors, the estimation procedure utilizes the assumption that the state ratio of sector share of GSP to income received for that sector is the same as this ratio on a national basis. For instance, GSP share for

the mining sector would be calculated as follows:

$$MSh = \left(\frac{M\$}{NIM}\right) \times SIM$$

where,

M$ = Mining Dollars in GNP
MSh = Mining Share of GSP
NIM = National Income Received in Mining Sector
SIM = State Income Received in Mining Sector

More detailed information is available for the farm sector on a state-by-state basis, so the farm sector share of GSP is calculated more directly by subtracting intermediate production expenses from the total value of farm output. In this study, the farm sector estimation procedure has been modified slightly to accommodate the farm data available from the Bureau of Economic Analysis.

The presentation of the results is divided into an analysis of the behavior of total Arkansas GSP and an analysis of the individual sectors composing GSP. Tabulated results include both current and constant (inflation adjusted) dollar estimates. The discussion that follows is stated on a constant dollar basis unless otherwise specified. In addition to the GSP estimates, personal income data for selected sectors of the Arkansas economy are presented to assist in analyzing particular areas of significant change.

Arkansas Gross State Product: An Overview

1960-1985

As presented in Table 1, Arkansas GSP increased from $10.01 billion in 1960 to $24.98 billion in 1985. During this period, the economy of Arkansas performed better than the economy of the United States. Arkansas GSP increased at an average annual rate of 3.73 percent versus 3.11 percent for GNP. The effect of this performance is evidenced by observing the change in the GSP/GNP ratio given in Table 1. The GSP/GNP ratio increased from 0.60 percent in 1960 to 0.70 percent in 1985. However, the ratio attained its maximum value of 0.72 percent in 1977 and 1978.

Reviewing the entire period, 1960-1985, the performance of Arkansas GSP and United States GNP is depicted in Figure 1. An examination of Figure 1 shows that GSP tends to behave in basically the same manner as GNP. When GNP increases, GSP also increases. During the period 1960 to 1985, there were five years (1970, 74, 75, 80, and 82) when real GNP declined from the previous year. In three of these years, (1975, 80, and 82), real GSP also declined. In 1970 and 1974, GSP showed a modest increase even though GNP decreased. Basically, however, GNP and GSP movements are in the same direction.

The 1960's

In the 1960's Arkansas GSP increased from $10.01 billion in 1960 to $14.92 billion in 1969, a percentage increase of 49.1 and an average annual rate of increase of 4.53 percent. At the same time, GNP increased from $1,665.3 billion in 1960 to $2,423.3 billion in 1969, an increase of 45.5 percent and an average annual rate of growth of 4.26 percent.

The 1970's

The GSP estimates indicate that the 1970's were an even more prosperous decade for Arkansas than were the 1960's

Table 1

Comparison of Gross National Product and Estimated Arkansas Gross State Product: 1960-1985

(Billions of Dollars)

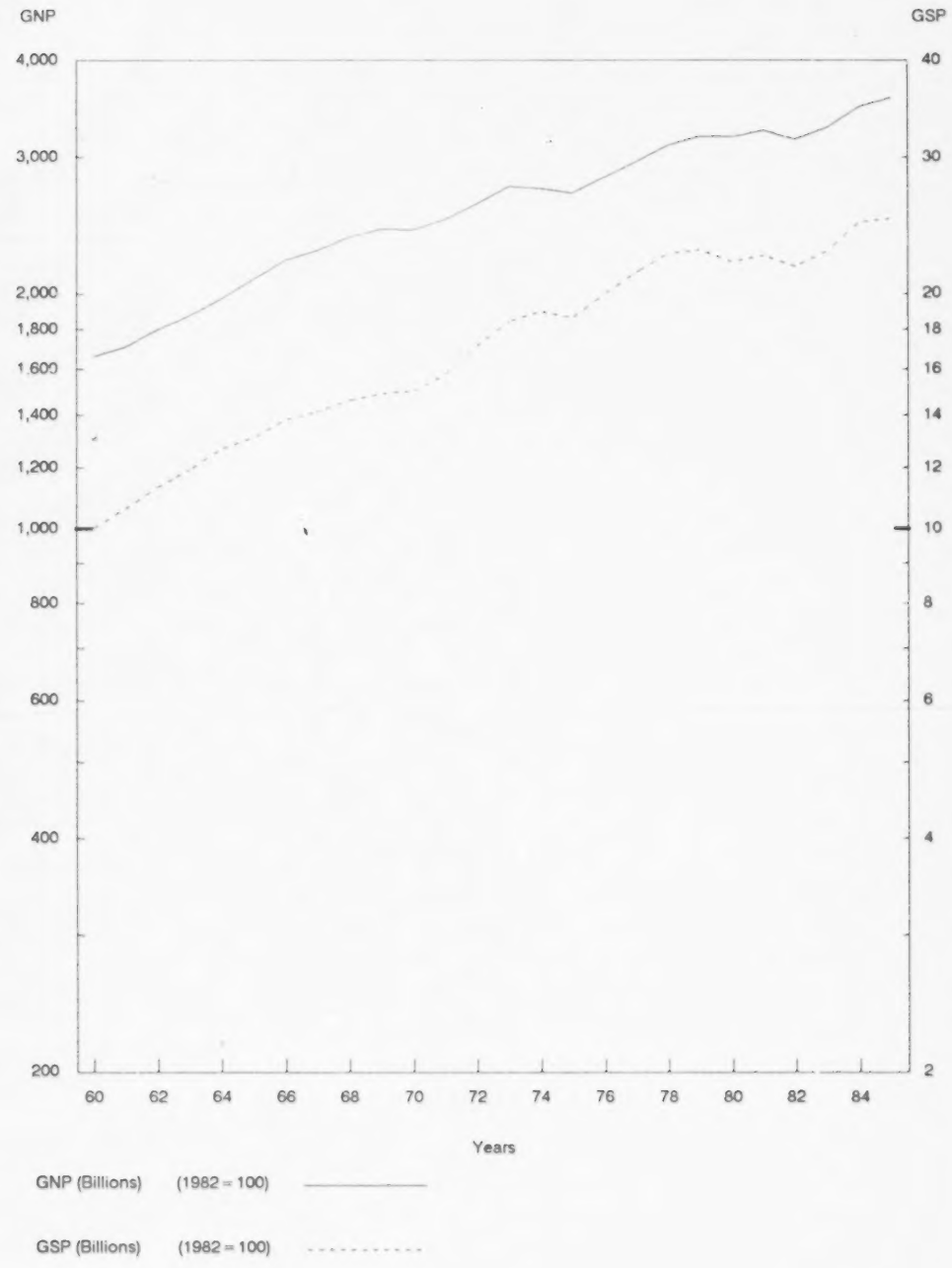
Year	Current Dollar GSP	Current Dollar GNP	Ratio GSP/GNP (%)	Constant Dollar GSP	Constant Dollar GNP	Ratio GSP/GNP (%)
1960	3.00	515.3	0.58	10.01	1,665.3	0.60
1961	3.23	533.8	0.60	10.63	1,708.7	0.62
1962	3.48	574.6	0.61	11.30	1,799.4	0.63
1963	3.73	606.9	0.62	11.90	1,873.3	0.64
1964	4.07	649.8	0.63	12.65	1,973.3	0.64
1965	4.33	705.1	0.61	13.09	2,087.6	0.63
1966	4.75	772.0	0.62	13.80	2,208.3	0.63
1967	4.99	816.4	0.61	14.12	2,271.4	0.62
1968	5.48	892.7	0.61	14.63	2,365.6	0.62
1969	5.95	963.9	0.62	14.92	2,423.3	0.62
1970	6.34	1,015.5	0.62	15.02	2,416.2	0.62
1971	7.07	1,102.7	0.64	15.75	2,484.8	0.63
1972	8.09	1,212.8	0.67	17.15	2,608.5	0.66
1973	9.54	1,359.3	0.70	18.44	2,744.1	0.67
1974	10.59	1,472.8	0.72	18.98	2,729.3	0.70
1975	11.31	1,598.4	0.71	18.65	2,695.0	0.69
1976	12.77	1,782.8	0.72	19.99	2,826.7	0.71
1977	14.52	1,990.5	0.73	21.29	2,958.6	0.72
1978	16.69	2,249.7	0.74	22.50	3,115.2	0.72
1979	18.27	2,508.2	0.73	22.75	3,192.4	0.71
1980	19.01	2,732.0	0.70	21.99	3,187.1	0.69
1981	21.10	3,052.6	0.69	22.37	3,248.8	0.69
1982	21.69	3,166.0	0.69	21.69	3,166.0	0.69
1983	23.57	3,405.7	0.69	22.71	3,279.1	0.69
1984	26.70	3,765.0	0.71	24.70	3,489.9	0.71
1985	27.64	3,998.1	0.69	24.98	3,585.2	0.70

Constant Dollar: 1982 = 100

Source: Arkansas GSP, estimated and converted to 1982 dollars using GNP industry deflators; GNP obtained from Survey of Current Business, U.S. Department of Commerce, April, 1986, p. 25, and July, 1986, p. 63.

(Table 1). Observing the growth of GNP and GSP, Arkansas GSP increased from $15.02 billion in 1970 to $22.75 billion in 1979. This gain of $7.73 billion represents an increase of 51.5 percent over the period. During the same period, GNP increased from $2,416.2 billion in 1970 to $3,192.4 billion in 1979, an increase of 32.1 percent. Thus, Arkansas GSP made a strong showing relative to the performance of GNP

Figure 1
Arkansas GSP and GNP



during the 1970's. The strong performance is particularly evident as the rates of increase for Arkansas GSP of 4.72 percent as opposed to a rate of 3.14 percent for GNP. Further evidence of the strong Arkansas performance in the 1970's is shown in Table 1 where the GSP/GNP ratio increased from 0.62 percent in 1970 to 0.71 percent in 1979.

The 1980's

The first half of the 1980's was not a period of rapid growth for either Arkansas GSP or United States GNP, due in part to a recession beginning in the fourth quarter of 1981 and persisting throughout 1982. GSP increased from $21.99 billion in 1980 to $24.98 billion in 1985. The percentage increase was 13.6, and the average annual rate of growth was 2.58. GNP increased from $3,187.1 billion in 1980 to $3,585.2 billion in 1985. The increase represented a change of 12.5 percent, and the average annual rate of change was 2.38 percent. The 1980's have experienced the slowest rates of growth for both GSP and GNP of all periods in the study. The GSP growth rate of 2.58 percent is slightly better than the GNP growth rate of 2.38 percent. Consequently, as shown in Table 1, the GSP/GNP ratio showed little change, increasing from 0.69 percent in 1980 to 0.70 percent in 1985.

Sector Analysis

Table 2 provides a breakdown of total Arkansas GSP into farm product, government product, and nine sectors for private nonfarm product stated in current dollars and constant dollars, respectively, for the years 1960, 1970, 1980, and 1985. In addition, the table indicates the percentage of GSP contributed by each sector.

Considering the three major sectors of farm, private nonfarm, and government, Table 2 indicates that the share of gross state product contributed by the farm sector declined from 11.4 percent to 5.1 percent between 1960 and 1985 while the private nonfarm share increased from 74 percent to 83.8 percent. The government share decreased from 14.6 percent to 11.3 percent over the same period.

Within the private nonfarm category, the manufacturing gain in sector share was quite pronounced as were the mining and construction sector losses. The manufacturing share of GSP increased from 13.8 percent in 1960 to 25 percent in 1985. The mining share of GSP decreased from 6.2 percent in 1960 to 2.7 percent in 1985, and the construction share declined from 9.6 percent to 4.5 percent during the same period. Other sectors with share gains were transportation-public utilities, services, wholesale trade, and finance-insurance-real estate. The retail trade sector share remained unchanged over the period.

Table 3 presents the overall percentage change and average annual growth rate for each sector for the entire period 1960-1985 and also for the subperiods 1960-1969, 1970-1979, and 1980-1985. From Table 3, it is observed that the farm sector grew at an average annual rate of only 0.5 percent over the period 1960-1985. During this same period, the private nonfarm sector grew at a 4.2 percent rate and the government sector grew at a 2.7 percent rate. Within the private nonfarm category, the greatest growth occurred in the manufacturing and wholesale trade sectors, and the

Table 2
Arkansas Gross State Product
Sector Contribution for Selected Years

	Current Dollars								Constant Dollars							
	(Millions)				Percent Contribution*				Millions (1982 = 100)				Percent Contribution*			
Sector	1960	1970	1980	1985	1960	1970	1980	1985	1960	1970	1980	1985	1960	1970	1980	1985
FARM	377.4	568.0	1,254.2	1,247.5	12.6	8.9	6.6	4.5	1,143.6	1,311.9	1,228.4	1,282.1	11.4	8.7	5.6	5.1
PRIVATE NONFARM																
Agri Services, Forestry, Fisheries	10.7	32.5	71.9	104.4	0.4	0.5	0.4	0.4	51.7	74.6	73.4	95.8	0.5	0.5	0.3	0.4
Mining	83.9	104.5	485.2	632.9	2.8	1.6	2.6	2.3	616.8	751.9	613.4	673.3	6.2	5.0	2.8	2.7
Construction	142.5	304.1	1,082.2	1,245.6	4.7	4.8	5.7	4.5	956.1	993.7	1,270.2	1,115.2	9.6	6.6	5.8	4.5
Manufacturing	589.3	1,541.6	4,459.6	6,389.3	19.6	24.3	23.5	23.1	1,383.4	3,095.5	5,108.4	6,239.6	13.8	20.6	23.2	25.0
Transportation, Public Utilities	310.4	567.4	1,887.2	3,081.8	10.3	9.0	9.9	11.1	838.8	1,037.5	2,298.6	2,661.3	8.4	8.7	10.5	10.7
Wholesale Trade	165.9	348.4	1,185.9	1,614.1	5.5	5.5	6.2	5.8	433.2	775.9	1,306.1	1,540.2	4.3	5.2	5.9	6.2
Retail Trade	349.9	704.3	1,916.5	2,921.0	11.7	11.1	10.1	10.6	1,063.6	1,511.4	2,244.2	2,645.8	10.6	10.1	10.2	10.6
Finance, Insurance, Real Estate	357.6	752.1	2,187.5	3,339.2	11.9	11.9	11.5	12.1	1,013.2	1,653.0	2,534.8	2,972.0	10.1	11.0	11.5	11.2
Services	285.7	637.8	2,236.7	3,703.6	9.5	10.1	11.8	13.4	1,054.3	1,570.9	2,647.0	3,120.2	10.5	10.5	12.0	12.5
TOTAL PRIVATE	2,295.9	4,992.7	15,512.8	23,031.9	76.4	78.8	81.7	83.3	7,411.0	11,734.5	18,096.1	20,883.3	74.0	78.2	82.2	83.8
GOVERNMENT	329.2	777.0	2,240.3	3,363.5	11.0	12.3	11.8	12.2	1,456.7	1,972.0	2,660.7	2,814.7	14.6	13.1	12.1	11.3
TOTAL GSP	3,002.5	6,337.7	19,007.3	27,642.9	100.0	100.0	100.0	100.0	10,011.3	15,018.4	21,985.2	24,980.1	100.0	100.0	100.0	100.0

Source: Estimated
*Totals may not sum due to rounding.

Table 3
Arkansas Gross State Product
Sector Changes for Selected Periods

	1960-1985				1960-1969				1970-1979				1980-1985			
	Current $		Constant $		Current $		Constant $		Current $		Constant $		Current $		Constant $	
	Overall Percent Change	Average Annual Rate of Change	Overall Percent Change	Average Annual Rate of Change	Overall Percent Change	Average Annual Rate of Change	Overall Percent Change	Average Annual Rate of Change	Overall Percent Change	Average Annual Rate of Change	Overall Percent Change	Average Annual Rate of Change	Overall Percent Change	Average Annual Rate of Change	Overall Percent Change	Average Annual Rate of Change
FARM	231	4.9	12	0.5	30	3.0	-2.4	-0.3	214	13.6	22.4	2.3	-0.5	-0.1	4.4	0.9
PRIVATE NONFARM	903	9.7	182	4.2	107	8.5	60	5.4	190	12.5	58	5.2	48	8.2	15	2.9
Agri Services, Forestry, Fisheries	876	9.5	85	2.5	186	12.4	43	4.0	108	8.5	-7	0.8	45	7.8	31	5.5
Mining	654	8.4	9	0.4	20	2.9	22	2.3	220	13.9	-21	-2.5	30	5.5	10	1.9
Construction	774	9.1	17	0.6	125	9.4	26	2.6	257	15.2	44	4.1	15	2.9	-12	-2.6
Manufacturing	984	10.0	351	6.2	153	10.9	125	9.4	179	12.1	72	6.2	43	7.5	22	4.1
Transportation, Public Utilities	893	9.6	217	4.7	68	6.0	51	4.7	195	12.8	74	6.3	63	10.3	16	3.0
Wholesale Trade	873	9.5	256	5.2	105	8.3	81	6.8	228	14.1	78	6.6	36	6.4	18	3.4
Retail Trade	735	8.9	149	3.7	90	7.4	41	3.9	163	11.4	53	4.8	52	8.8	18	3.4
Finance, Insurance, Real Estate	834	9.4	176	4.1	95	7.7	59	5.3	170	11.7	55	5.0	53	8.8	10	2.0
Services	1,200	10.8	196	4.4	108	8.5	47	4.4	209	13.4	64	5.7	66	10.6	18	3.3
GOVERNMENT	922	9.7	93	2.7	111	8.7	34	3.3	160	11.2	32	3.1	50	8.5	6	1.1
TOTAL GSP	821	9.3	150	3.7	98	7.9	49	4.5	188	12.5	52	4.7	45	7.8	14	2.6

Source: Estimated

least growth occurred in the mining and construction sectors.

The 1960's

Table 3 also presents the growth rates during the 1960's. The farm sector actually contracted slightly, the private nonfarm sector grew at a rate of 5.4 percent, and the government sector grew at a rate of 3.3 percent. Within the private nonfarm sector, the strongest rates of growth were in manufacturing (9.4 percent), wholesale trade (6.8 percent), and finance-insurance-real estate (5.3 percent). At this point in time, growth in the services sector (4.4 percent) was still slightly less than the overall GSP growth rate of 4.5 percent.

The 1970's

During this period of high inflation, several sectors registered relatively high growth rates stated in current dollars, but less impressive (or negative) rates when measured in constant dollars. In nominal terms, every sector except the agriculture-forestry-fisheries sector registered double digit rates of increase during the 1970's. However, when the effects of inflation are removed, a considerably different picture emerges. Most notably, the mining sector grew at a 13.8 percent rate in current dollars, but actually showed a negative rate in terms of real output (-2.5 percent). The nominal rise in mining (220 percent) was largely the result of the huge increase in the price of crude petroleum during this period. The farm sector demonstrated a modest real growth rate of 2.3 percent, the private nonfarm sector grew at a real rate of 3.1 percent. Within the private nonfarm sector, manufacturing (6.2 percent), transportation-public utilities (6.3 percent), wholesale trade (6.6 percent), and services (5.7 percent) were the best performers in terms of constant dollar growth rates. Also, in real terms, the services and transportation-public utilities sectors grew faster in the 1970's than they did in the 1960's, but the manufacturing sector experienced a slower rate of real growth.

The 1980's

In the most recent period, 1980-1985, the continued decline of the farm sector was evidenced by a growth rate of only 0.9 percent (Table 3). The government sector grew at a rate of only 1.1 percent during the period. The private nonfarm sector grew at a 2.9 percent rate, the lowest growth rate for this sector for all the sub-periods considered. The agriculture-forestry-fisheries sector registered the largest gain, 5.5 percent; however, the small size of this segment plus its recent volatility make this gain less impressive than the data indicates. The next largest rate of change was in the manufacturing sector (4.1 percent), although this was a rate less than that of the 1960's and 1970's. The transportation-public utilities, wholesale trade retail trade, finance, insurance-real estate, and services sectors also grew at rates less than those of the previous sub-periods. The mining sector improved slightly during the period while the construction sector showed a slight contraction.

Sector Contributions, 1960 and 1985

Table 4 shows the contribution to gross product by sector for Arkansas and the United States for the years 1960 and 1985, respectively. The table also presents the rank by percent of total GSP for each sector. An examination of Table 4 reveals a considerable difference between the composition of GNP and the composition of

Table 4
Contribution to Gross Product by Sector
1960 and 1980
Arkansas and United States

	1960						1985					
	Arkansas			United States			Arkansas			United States		
Sector	Millions of 1982 Dollars	Percent of Total	Rank	Millions of 1982 Dollars	Percent of Total	Rank	Millions of 1982 Dollars	Percent of Total	Rank	Millions of 1982 Dollars	Percent of Total	Rank
Farm	1,143.6	11.4	3	61,200	3.7	10	1,281.1	5.1	8	77,600	2.2	10
Agri Services, Forestry, Fisheries	51.7	0.5	11	5,800	0.4	12	95.8	0.4	11	14,600	0.4	12
Mining	616.8	6.2	9	94,200	5.7	8	673.3	2.7	10	130,600	3.6	9
Construction	956.1	9.6	7	163,100	9.8	5	1,115.2	4.5	9	163,100	4.5	8
Manufacturing	1,383.4	13.8	2	338,700	20.4	1	6,239.6	25.0	1	776,900	21.7	1
Transportation, Public Utilities	838.8	8.4	8	127,800	7.7	7	2,661.3	10.7	5	323,300	9.0	6
Wholesale Trade	433.2	4.3	10	91,600	5.5	9	1,540.2	6.2	7	264,500	7.4	7
Retail Trade	1,063.6	10.6	4	153,800	9.2	6	2,645.8	10.6	6	339,800	9.5	5
Finance, Insurance, Real Estate	1,013.2	10.1	6	206,500	12.4	3	2,792.0	11.2	4	523,900	14.6	3
Services	1,054.3	10.5	5	190,200	11.4	4	3,120.2	12.5	2	538,500	15.0	2
Government	1,456.7	14.6	1	240,300	14.4	2	2,814.7	11.3	3	399,400	11.1	4
Rest of World	NA	NA	NA	11,100	0.7	11	NA	NA	NA	37,000	1.0	11
TOTAL	10,011.3	100.0	NA	1,665,300	100.0	NA	24,980.2	100.0	NA	3,585,200	100.0	NA

Source: Arkansas GSP, estimated and converted to 1982 dollars using GNP industry deflators; GNP obtained from *Survey of Current Business*, U.S. Department of Commerce, April, 1986, p. 25, and July 1986, p. 63.

Arkansas GSP in 1960. Four sectors (farm, construction, retail trade, and finance-insurance-real estate) differ by more than one rank position when comparing Arkansas GSP and GNP. The largest differences in rank were the farm sector, third largest in Arkansas GSP at 11.4 percent but ranking only tenth as 3.7 percent of GNP, and finance-insurance-real estate which ranked sixth at 10.1 percent of GSP but ranked third in GNP contribution, constituting 12.4 percent of that total. Manufacturing ranked first in contribution to GNP and ranked second in contribution to Arkansas GSP. However, though they differed by only one rank position, they differed considerably in sector contribution. In Arkansas, manufacturing contributed 13.8 percent of the GSP total, while in the United States, manufacturing contributed 20.4 percent of GNP.

By 1985, Arkansas GSP contribution by sector had changed to more closely resemble the structure of GNP. When comparing Arkansas GSP and GNP, the largest difference in rank is two positions, this difference occurring in the farm sector. This change reflects movements in Arkansas of the farm sector from third to eighth position, the finance-insurance-real estate sector from sixth to fourth position, the transportation-public utilities sector from eighth to fifth position, and the services sector from fifth to second position. Although the manufacturing sector moved up only one rank position, its contribution to GSP made an impressive rise to 25 percent.

The first four ranks in Arkansas are occupied by manufacturing, services, government, and finance-insurance-real estate, in that order. The first four ranks nationally are manufacturing, services, finance-insurance-real estate, and government, in that order. These four sectors account for 60 percent of GSP in Arkansas and 62.5 percent of GNP. A possible implication of this alignment of Arkansas GSP with GNP is that the Arkansas economy is now more closely tied to movements in the national economy.

1960-1985 Sector Analysis

Overall, the sector analysis indicates a decline in the weight of the farm sector, an increase in the weight of the private nonfarm sector, and a decline in the weight of the government sector in terms of their contribution to Arkansas GSP. The farm sector decline over the period reflects the problems of the agriculture industry in general in the United States. Also, within the private nonfarm category, the decline of the mining sector reflects mainly the decline of the petroleum industry on a national basis. However, it is interesting to note that despite the declines in these three areas, the overall performance of Arkansas GSP exceeded the performance of GNP in all the periods considered. Thus, some sectors demonstrated exceptionally good gains in order to overcome the losses of the declining sectors and still exceed the national growth rate on an overall basis.

For the private nonfarm and government sectors, real average annual growth rates were greatest during the 1960's and smaller over the 1970's and first half of the 1980's. Within the private nonfarm category, the manufacturing sector was the best performer in terms of real growth followed by wholesale trade, transportation-public utilities, service, and finance-insurance-real estate in that order.

The manufacturing sector was clearly the most outstanding performer during all the periods considered, although its growth slowed in the more recent subperiods. This

indicates that Arkansas has been highly successful in promoting growth and development of the manufacturing industry in the state during this period.

The wholesale trade sector was one of the best performers in Arkansas in terms of the increase in its percent contribution to GSP, while the retail sector contribution remained unchanged over the 1960-1985 period. This suggests a possible rise in the number of wholesale distribution centers located within the state.

The services sector also gained sector share in Arkansas during the 1960-1985 period, mirroring a trend also observed on a national basis. However, the services sector share of GSP increased by only 19.1 percent compared to a 30.7 percent increase in the services sector share of GNP. Therefore, it appears that even though the services sector performed well compared to other sectors of Arkansas GSP, it is lagging the national growth rate in that area. However, if Arkansas continues the trend of closer alignment with GNP, this could also imply more growth still to come in the services industry.

The manufacturing sector made impressive gains over the period considered in this study; however, its average annual growth rate slowed as its sector share approached and exceeded the manufacturing sector share of GNP. Similar patterns of declining growth rates were also noted for the wholesale trade and finance-insurance-real estate sectors. Consequently, prospects for continued rapid growth in these areas may be diminishing.

In contrast, the transportation-public utilities and services sectors demonstrated increased average annual growth rates in the 1970's. Their growth rates declined, as did almost all sectors during the first half of the 1980's, an indication of the generally poor economic conditions from 1980-1982. Thus, these two sectors may be candidates for continued strong growth in the 1980's. An extension of the data base to include more of the expansionary period since late 1982 will be required to provide more information regarding the growth prospects of these two sectors.

Within these high growth sectors, more specific information can be obtained by examining personal income data for subcategories within each sector. Personal income data is available on a more detailed basis for all these sectors with the exception of wholesale trade. Table 5 presents this data for selected categories within the manufacturing, transportation-public utilities, and services sectors for the years 1960 and 1985.

Inspection of Table 5 suggests that, based on changes in personal income sector percent contribution, rubber and miscellaneous plastics products, machinery except electrical, and electrical and electronic equipment were the best performers within the manufacturing sector. Petroleum-coal and lumber-wood products had sizable contribution declines over the period.

In the transportation-public utilities area, trucking-warehousing and communications evidenced the highest contribution gains. In the services sector, business services and health services had the largest share gains, while private household services and membership organizations showed large share losses.

Summary

Using a modified version of the Kendrick-Jaycox methodology, Gross

Table 5

Arkansas Constant Dollar Personal Income for Selected Sectors, 1960 and 1985

(Millions of 1982 Dollars)

Sector	1960 Personal Income	1960 Percent Contribution	1985 Personal Income	1985 Percent Contribution
Manufacturing	$930.8	100.0	$4,055.9	100.0
Food & Kindred Products	126.8	13.6	598.7	14.8
Paper & Allied Products	87.0	9.4	338.4	8.3
Petroleum & Coal Products	61.5	6.6	30.2	0.7
Rubber & Misc. Plastics Products	7.9	0.9	232.6	5.7
Lumber & Wood Products	164.5	17.7	331.8	8.2
Furniture & Fixtures	69.5	7.5	130.9	3.2
Fabricated Metal Products	39.4	4.2	319.0	7.9
Machinery, Except Electrical	23.3	2.5	505.0	12.5
Electrical & Electronic Equipment	23.4	2.5	447.8	11.0
All Other Manufacturing	327.5	35.2	1,121.5	27.7
Transportation-Public Utilities	433.7	100.0	1,264.5	100.0
Railroad Transportation	175.6	40.5	178.5	14.1
Trucking & Warehousing	102.0	23.5	496.9	393.3
Communication	44.1	10.2	247.8	19.6
Electrical, Gas, & Sanitary	85.9	19.8	278.8	22.1
All Other Transportation	26.1	6.0	62.5	4.9
Services	890.3	100.0	2,499.8	100.0
Hotels & Other Lodging Places	44.7	5.0	64.5	2.6
Personal Services	96.3	10.8	165.4	6.6
Private Household	161.3	18.1	68.3	2.7
Business Services	33.8	3.8	363.9	14.6
Auto Repair Services Garages	41.3	4.6	175.8	7.0
Amusement & Recreational Services	17.0	1.9	44.1	1.8
Health Services	210.3	23.6	996.0	39.8
Membership Organizations	127.1	14.3	112.1	4.5
All Other Services	158.5	17.8	509.7	20.4

Sources: 1. *State Personal Income Estimates for 1929-82*, U.S. Department of Commerce, Bureau of Economic Analysis, February, 1984, p. 156.

2. *State Personal Income for 1985*, U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, August, 1986. (provided on diskette).

Totals may not sum due to rounding.

State Product for Arkansas was estimated for the years 1960 through 1985 in both current and constant (1982) dollars. Measured in constant dollars, Arkansas GSP increased from $10.01 billion in 1960 to $24.98 billion in 1985, representing an overall gain of 149.6 percent and an average annual rate of increase of 3.73 percent. These gains compare very favorably to a 115.3 percent overall growth and 3.11 percent average annual growth rate for GNP during this same period. In 1960, Arkansas GSP represented about 0.60 percent of GNP. This percentage rose to 0.70

percent in 1985. As shown in Figure 1, the behavior of Arkansas GSP is quite similar to that of GNP over the period considered in this study.

On a sector by sector basis, it was noted that the structure of Arkansas GSP moved more in line with the structure of GNP during the period 1960 through 1985. The most prominent downward shift was in the farm sector which dropped from third position in terms of contribution to GSP in 1960 to eighth position in 1985. Significant upward movements in rank were noted in the transportation-public utilities, wholesale trade, finance-insurance-real estate, and services sectors. The manufacturing sector moved from second to first position during the period and experienced the most dramatic percentage contribution improvement. Thus, Arkansas made a noticeable shift from an economy with a significant agricultural base toward one with a more diversified manufacturing, services, and finance base during the period covered by this study.

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[1]The authors wish to thank Dr. David Robinson of Louisiana Tech University for his valuable comments on earlier drafts of this paper.

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[3]John W. Kendrick and C. Milton Jaycox, "The Concept and Estimation of Gross State Product," *The Southern Economic Journal*, October, 1965, pp. 153-168.

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How the Tax Reform Act of 1986 Will Stimulate Sole Proprietorship, Partnership, and Subchapter S Corporation Capital Investment: A Commercial Real Estate Example

Fred Hendon
Professor of Economics
Samford University

Gene Grant
Assistant Professor of Accounting
Samford University

Chad Denson
Assistant Professor of Finance
Samford University

Jennings Marshall
Associate Professor of Economics
Samford University

Introduction

The purpose of this article is to assess the impact of the 1986 Tax Reform Act on the profitability of business investment in commercial real estate ventures by those who are taxed by their individual tax rate. They include sole proprietorships, partnerships, and Subchapter S corporations, but exclude corporate rate taxpayers.

In recent months there have been extensive discussions in business publications about the effect of tax reform on the economy. The consensus seems to be that long-term business capital formation will be adversely affected. The principal reasons cited are the detrimental effects of the elimination of the investment tax credit and the lengthening of depreciable asset lives--these negative effects more than outweigh the reduction in tax rates. Many observers have concluded that the more capital intensive the business operations, the more severely will tax reform retard business investment. Many writers have gone further and voiced the opinion that commercial real estate projects will be subjected negatively to the greatest impact.

Throughout these discussions there seems to be a lot of attention devoted to opinion and almost none to analysis. Therefore, this article will compare the profitability of a hypothetical real estate investment project (such as office buildings, hotels, etc.) under the old tax law and under the new provisions using the well known capital budgeting technique of Net Present Value (NPV). This technique calculates the "net present value" after taxes to a firm for any investment prospect. A positive (negative) figure would indicate an increase (decrease) in the value of the firm as a result of asset acquisition. If it can be shown for a given set of hypothetical cash flow data that NPV is higher under the new tax provisions than under the previous tax law, then tax reform may stimulate rather than stifle business commercial real estate investment.

Analysis Under Prior Tax Law

The assumed cash flow data for a hypothetical commercial development is as follows (dollar figures are in 000,000's):

Cost of Project	$100
Asset Life (real)	35 years
Annual Incremental Earnings Before Depreciation and Taxes	$50
Discount Rate	10 percent
Investment Tax Credit	(10%)
Net Cost	$90
Depreciable Base	$95

Note that under the old law the investment tax credit was 10 percent, and real estate could be depreciated over 19 years under the Accelerated Cost Recovery System (ACRS). The individual tax rate for owners of sole proprietorships, partnerships, and Subchapter S corporations was 50 percent. Table 1 presents the calculations of net present value of the assumed project under the old tax law.

Table 1 data show that the present value of the cash flows over the 35-year life is $265 million. Subtracting the $90 million net cost from that figure leaves a NPV of $175 million.

Analysis Under New Tax Law

Under the new tax law, the depreciable asset life of non-residential property increases from 19 to 31.5 years. Moreover, write-offs for real estate are no longer accelerated but are limited to straight-line depreciation. The new law eliminates the investment tax credit but lowers the individual tax rate to 28 percent.

Using the same cash flow and cost figures as above, Table 2 presents the calculations of NPV under the new tax law (in 000,000's).

Table 2 figures indicate that the present value of the incremental cash flow is $355.7 million. From this is subtracted the $100 million original cost giving a NPV of $255.7 million. Compared with results under the old tax law, tax reform yields an increase of $80.7 in NPV or an increase of approximately 46 percent.

Effect of Alternative Discount Rates

By changing the assumed discount rate from 10 percent to 5 and 15 percent, respectively, the NPV comparison changes from a current law increase of 46 percent (using a 10 percent discount rate) to an increase of 43 percent (using a 5 percent discount rate) and 53 percent (using a 15 percent discount rate). Thus, the higher the cost of capital, the more favorable is the impact of the 1986 Tax Reform Act on the profitability of new capital projects.[1]

Conclusion

As the above calculations show, changes in the individual tax provisions contained in the Tax Reform Act of 1986 have a significant, positive impact on the NPV of cash flows compared with the prior tax law for non-residential real estate. The results seem to contradict the opinions of the majority of recent writers on the subject. Although this analysis assumed hypothetical data, it made a comparative evaluation of the three most important changes in

Table 1

Net Present Value of Apartment Project: Old Tax Law

Year (1)	Earnings Before Depreciation and Taxes (2)	Depreciation (3)	Earnings Before Taxes (4)	Taxes (50%) (5)	Earnings After Taxes (6)	Cash Inflows (7)	Present Value Factor (10%) (8)	Present Value (9)
1	$50.0	$8.4	$41.6	$20.8	$20.8	$29.2	0.909	$26.5
2	50.0	8.0	42.0	21.0	21.0	29.0	0.826	24.0
3	50.0	7.2	42.8	21.4	21.4	28.6	0.751	21.5
4	50.0	6.6	43.4	21.7	21.7	28.3	0.683	19.3
5	50.0	6.0	44.0	22.0	22.0	28.0	0.621	17.4
6	50.0	5.4	44.6	22.3	22.3	27.7	0.564	15.6
7	50.0	4.9	45.1	22.6	22.5	27.4	0.513	14.1
8	50.0	4.5	45.5	22.8	22.7	27.2	0.467	12.7
9	50.0	4.0	46.0	23.0	23.0	27.0	0.424	11.4
10	50.0	4.0	46.0	23.0	23.0	27.0	0.386	10.4
11	50.0	4.0	46.0	23.0	23.0	27.0	0.350	9.5
12	50.0	4.0	46.0	23.0	23.0	27.0	0.319	8.6
13	50.0	4.0	46.0	23.0	23.0	27.0	0.290	7.8
14	50.0	4.0	46.0	23.0	23.0	27.0	0.263	7.1
15	50.0	4.0	46.0	23.0	23.0	27.0	0.239	6.5
16	50.0	4.0	46.0	23.0	23.0	27.0	0.218	5.9
17	50.0	4.0	46.0	23.0	23.0	27.0	0.198	5.3
18	50.0	4.0	46.0	23.0	23.0	27.0	0.180	4.9
19	50.0	4.0	46.0	23.0	23.0	27.0	0.164	4.4
20	50.0	0.2	49.8	24.9	24.9	25.1	0.149	3.7
21	50.0	0.0	50.0	25.0	25.0	25.0	0.135	3.4
22	50.0	0.0	50.0	25.0	25.0	25.0	0.123	3.1
23	50.0	0.0	50.0	25.0	25.0	25.0	0.112	2.8
24	50.0	0.0	50.0	25.0	25.0	25.0	0.102	2.6
25	50.0	0.0	50.0	25.0	25.0	25.0	0.092	2.3
26	50.0	0.0	50.0	25.0	25.0	25.0	0.084	2.1
27	50.0	0.0	50.0	25.0	25.0	25.0	0.076	1.9
28	50.0	0.0	50.0	25.0	25.0	25.0	0.069	1.7
29	50.0	0.0	50.0	25.0	25.0	25.0	0.063	1.6
30	50.0	0.0	50.0	25.0	25.0	25.0	0.057	1.4
31	50.0	0.0	50.0	25.0	25.0	25.0	0.052	1.3
32	50.0	0.0	50.0	25.0	25.0	25.0	0.047	1.2
33	50.0	0.0	50.0	25.0	25.0	25.0	0.043	1.1
34	50.0	0.0	50.0	25.0	25.0	25.0	0.039	1.0
35	50.0	0.0	50.0	25.0	25.0	25.0	0.036	0.9

Total present value	$265
Less net cost	90
Net present value	175

Table 2
Present Value--Incremental Cash Flow

	Years 1 - 32	33	34	35
Earnings before depreciation and taxes	$50.0	$50	$50	$50
Depreciation	3.2	0	0	0
Earnings before taxes	46.8	50	50	50
Taxes (28%)	13.1	14	14	14
Earnings after taxes	33.7	36	36	36
Depreciation	3.2	0	0	0
Cash flows	36.9	36	36	36
Interest factor	9.526	.043	.039	.036
Present value	351.5	1.5	1.4	1.3

Total present value	355.7
Less cost	100.0
Net present value	255.7

taxes on sole proprietorships, partnerships, and Subchapter S corporations embodied in tax reform--elimination of ITC, lengthening of depreciable asset lives, and reduction in tax rates.[2] These results suggest that recent pessimism may be unwarranted as regards tax effects on the profitability of new commercial real estate projects. In the opinion of the authors, it would be advisable for all sole proprietorship, partnership, and Subchapter S corporate real estate developers to systematically re-evaluate projects in light of changes in the tax code. Based on the results of the comparative NPV analysis of this study, the Tax Reform Act of 1986 may provide a significant stimulus for commercial real estate investment in the future.[3]

[1]These NPV computations are not shown, since they are procedurally similar to those in Tables 1 and 2, but are available from the authors upon request.

[2]Elimination of the capital gains tax preference will have a detrimental effect on the after-tax returns of individual business owners, possibly causing a decrease in the value of investing in such businesses. However, the effect of such a change is not explicitly relevant to NPV computations, and is, therefore, not considered in this analysis.

[3]This study is an outgrowth of earlier research simulation undertaken by the authors on the effect of the 1986 Tax Reform Act on various capital assets with differing depreciable tax lives.

An Empirical Investigation of Computer Anxiety in Managers

Virginia T. Geurin, Ph.D.
Associate Professor of Business Administration
University of North Carolina at Charlotte

Gary F. Kohut, Ph.D.
Assistant Professor of Business Administration
University of North Carolina at Charlotte

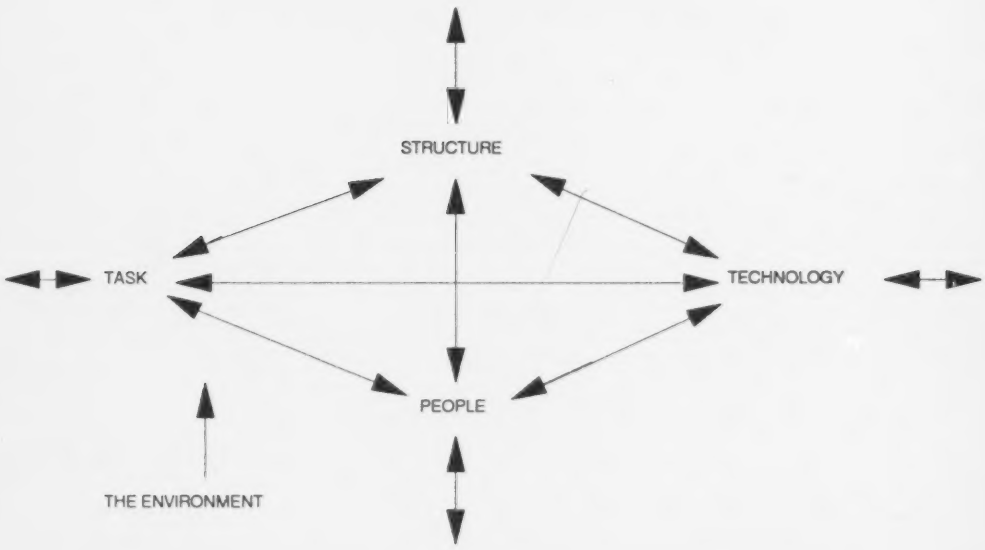
Introduction

The ability of organizations to incorporate computer technology into the managerial work environment impacts on organizational efficiency and effectiveness. Research indicates that the use of personal computers radically alters relationships between information systems/data processing specialists and managers, and improves decision making, reduces response time, and improves long-range planning.[1] Many studies have pointed to the perceived value of computers as management tools. One study conducted by MIT's Sloan School of Management found that at least one senior executive had a computer terminal on his desk in 30 of 45 randomly selected Fortune 500 companies. Half the companies surveyed planned to expand their executives' use of personal computers in the next few years.[2] Mark Shepherd, the chief executive officer of Texas Instruments, has called technology the "life blood of competitive leadership."[3]

With the increasing pervasiveness of computers in management, there is corresponding pressure for managers to understand and become familiar with computers and the opportunities they provide. Yet, many managers completed school long before familiarization with computers was seen as essential to doing business. Furthermore, one poll found that the average executive had not been in the classroom in 10 years.[4] Consequently, many managers now fear such job outcomes as being sidetracked or fired due to this educational deficiency.[5]

Organizations are volatile, complex, yet understandable systems of task, structure, technology, and people, each affecting the other[6] (See Figure 1). Change whether introduced through technology, structure, or people eventually affects every aspect of an organization. The decline in costs and the numerous possible uses envisioned for the computer have largely contributed to a technological revolution in organizations.[7] A case study of an insurance company illustrates the impact of a change in technology on organizational structure. The casewriters indicate, "The organizational potential created by the total processing system would not be realized until the social system, the organization of the people, was adapted to take full advantage of the new technological capabilities".[8] Based on the interrelationships among the variables in Leavitt's model, it is obvious that the changes in information technology will

Figure 1
Levitt's Model of Organizational Change



have a significant impact on the people in an organization. One author found that large numbers of 35-to 45-year old middle managers are being demoted or fired because of their inability or unwillingness to learn about computers.[9] Also vulnerable, the author reported, are financial analysts, production and inventory controllers, researchers, and executive assistants--in short, positions where computer technology is central to the job. Although some managers may suffer from phobia, others may suffer lesser forms of anxiety arising from "technostress" induced by the demand of learning to work with new technology. According to Craig Brod, the important variables affecting the probability of suffering from technostress are age of user, past experience with technology, perceived control of new tasks, and organizational climate.[10] And some people contend that women are more anxious than men about computer use.[11] While organizations are integrating computer technology into management, some managers who were educated prior to the computer revolution are finding it difficult to adapt to the rapidly changing environment. Adaptation requires them to unlearn manual approaches to decision making and problem solving and relearn computer based methods. Failure to do so may result in the loss of valuable management talent. Furthermore, the personal costs of being "washed up at forty" are immeasurable.

A literature review indicates that there is a link between personal characteristics and computer anxiety.[12] Despite the growing number of research efforts that attempt to clarify these links, the results of this body of research are fragmented and difficult to generalize to managers. This state of affairs has arisen because most previous research on computer anxiety has suffered

two major shortcomings. First, a generalized measure of computer anxiety has not been used. Second, empirical research efforts have rarely focused on managerial samples. A meaningful assessment of computer anxiety among managers should recognize individual differences as well as be generalizable across situations. This research study attempted such an assessment using a sample of managers.

Method

This investigation was an exploratory attempt to measure computer anxiety levels among managers in two large organizations and to identify related demographic factors. A computer anxiety scale was administered to determine the level of comfort felt toward the use of computers. The COMPAS, Computer Anxiety Scale[13], is based on concept-specific anxiety, an anxiety that people associate with specific situations. The COMPAS consists of a set of items that describe scenarios where individuals would interact with a computer. Each short description is followed by a pair of adjectives, with a five-point Likert-type scale between the adjectives, such as:

A. Solving simple problems on a small computer with someone nearby to answer questions.

Confident - - - - - anxious

There is a great deal of experimental evidence that the COMPAS is a valid measure of computer anxiety.[14] Many of the adjective pairs used in the COMPAS have been shown to be valid indicators of anxiety. In studies where the COMPAS has been used the internal reliability (Cronbach Alpha) was .96.

In addition to the COMPAS, open-ended questions were designed to ascertain perception about the introduction of computers into the workplace. Subjects were asked, "What changes have occurred in your organization with regard to the introduction of computers and computer technology? In the last year? _____ In the past five years? _____ In the past ten years? _____." Subjects were also asked to elaborate on the question, "How have these changes affected the way in which you do your job?" Finally, demographic characteristics such as age, education, and sex were obtained to identify any differences in computer anxiety levels.

Analysis

A breakdown of subject demographics is shown in Table 1. All subjects had received some exposure to computers. In both organizations there was some organizational expectation that they would achieve some level of computer proficiency through either internal or company-sponsored external training activities.

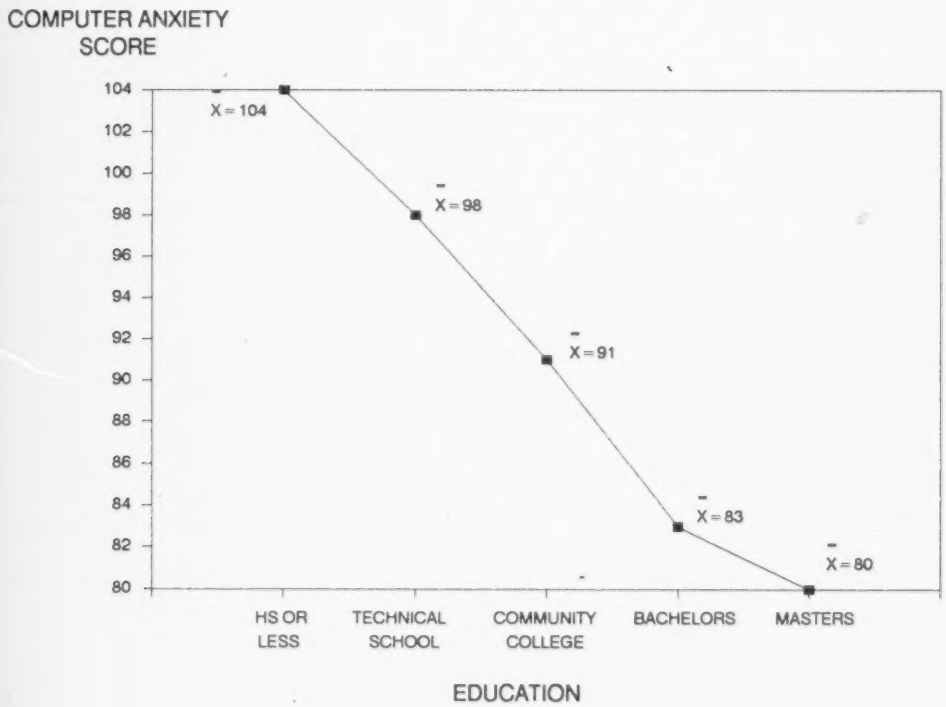
Results from the COMPAS range from 40 (very relaxed/confident) to 200 (extremely anxious). A score of 120 or higher represents mild anxiety, while those scoring 140 or higher are described as anxious/tense. Of the 195 managers, 16% indicated some degree of anxiety. Those who experienced mild anxiety (COMPAS score = 120-139) constituted 10 percent (21) of the sample, while 6 percent 12) were classified as anxious/tense (COMPAS score = 140 or higher).

There were no significant differences in anxiety levels between the two organizations. An inverse relationship was found between education and anxiety (See Figure 2). Mean anxiety scores for those who had at least a Bachelor's degree, $x = 82$, differed significantly from those

Table 1
Demographics OF Sample

Sex	N	Age	N	Education	N
Male	125	Under 25	15	High School or Less	12
Female	70	25 - 29	21	Junior College	23
		30 - 34	49	Vocational/Tech	11
		35 - 39	53	Bachelors Degree or higher	149
		40 - 44	30		
		45 - 49	11		
		50 - 54	9		
		55 ---	7		
Totals	195		195		195

Figure 2
Relationship of Computer Anxiety to Education



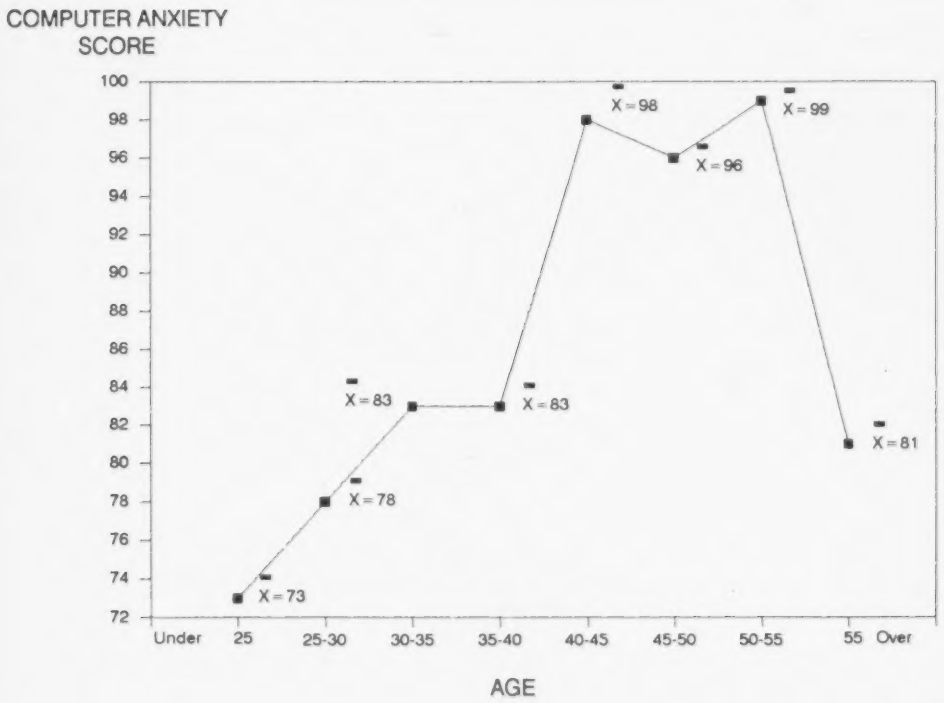
who had less than a Bachelor's degree, x=96, (t=2.83, R .01).

In general, mean anxiety scores increased with age (See Figure 3). The only age bracket to differ from the trend was 55 and over in which the seven subjects had an average score of 81. Two of the seven, however, had a score of 120 or higher.

Males and females were similar in computer anxiety scores. Of the seventy women, 10 percent (7) reported mild anxiety, (COMPAS score = 120-139) and 4 percent (3) reported high anxiety (COMPAS score = 140 or greater). Mild anxiety was reported by 11 percent (14) of the males, while 7 percent (9) experienced high anxiety. The average score for males was slightly higher than for females, 87 versus 83.

Comments to the open-ended questions indicated that the managers as a group felt very positive about the introduction of computers into their workplace. Many referred to the increased efficiency gained through the use of computers for electronic mail, communication, and data manipulation. Many managers reported that they were now able to handle routine matters with greater facility and felt they had more time for creative thinking.

Figure 3
Relationship of Computer Anxiety to Age



Some negative aspects reported were a degree of insecurity and a lack of confidence in dealing with the technology. Also mentioned was less face-to-face contact than they had experienced prior to the introduction of computers in their workplace. Finally, some managers felt they had become involved in an unnecessary amount of detail work which detracted from the time available for data analysis.

Discussion

These results indicate that effective adaptation is occurring in these two companies. Both organizations recognize the need for taking a systematic approach to introducing computers as useful and necessary management tools. For example, both organizations are moving toward company-wide use of electronic mail and are making knowledge of computers a requirement in the Workplace. One company is conducting computer training internally and is systematically making it available to their managers, while the other is utilizing external training resources that are required for all managers.

Although the reported anxiety levels were relatively low (84 percent had scores below 120) it is worth noting that 16 percent of these managers reported at least some mild anxiety related to the use of computers as part of their jobs. This is in two organizations which have already established company-wide computer training for their managers. Based on the findings of this study, education as well as age tend to be related to computer anxiety. To insure that computer training programs are as effective as possible, these differences as well as varying levels of computer skills should be considered.

American business and industry is involved in a technological revolution. The potential growth in computer usage by managers in organizations is very high and it seems as though the demand will continue to grow. According to John F. Rockhart, Director of the Center for Information Systems at the Sloan School, "By 1990, there will be routine use of computer terminals in the executive suite."[15] Incorporating strategies to effectively address computer anxiety into training programs would be an appropriate response.

There appears to be a wide variation among managers in their acceptance of new technology, specifically computers. Various behaviors have emerged, ranging from eager acceptance to sabotage, with the majority somewhere in between.[16] Recognition of these widely divergent responses is necessary if training programs are to be as effective as possible. The results of this study suggest a need to expand the sample to include a variety of organizations, some of which have not taken a proactive approach to computer training for their managers.

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[9]Terence Roth, "Finished at Forty," p. 43C.

[10]Craig Brod, "How to Deal with 'Technostress'," *Office Administration and Automation*, 45, 8, 1984, pp. 28-30, 46-47.

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[14]E. R. Oetting, Computer Anxiety Scale, pp. 1-16.

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Editor's Note:

This issue of the *Arkansas Business and Economic Review* is the initial output of the in-house desk-top publishing system of the College of Business Administration, University of Arkansas, Fayetteville.

The cover, of course, is different and the "in process" time has been shortened in the hope that the published articles will retain more currency than in the recent past. Other changes are contemplated to improve the presentation of research papers in the *Review*. Such changes will be noted when they occur.

The *Review* staff hopes that you readers advise of needed improvements or recommended changes relative to both content and format of the covered articles as well as provide comments on how to make the publication more useful to you.

Selected Arkansas and U.S. Economic Indicators

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1988 - Slower Growth, but for Different Reasons

Phillip Taylor
Director, Bureau of Business and Economic Research
University of Arkansas, Fayetteville

Opinions stated earlier concerning a slower growth rate for the Arkansas economy in 1988 are holding firm but for slightly different reasons. The outlook for crop yields, particularly soybeans, has improved sharply but with some decline in commodity prices. Higher feed costs have negatively impacted on the poultry industry but improvements are expected in the latter part of the year. Overall then, the negative concerns with respect to the agricultural sector have lessened somewhat but improved performance in this sector is not likely to totally offset problems elsewhere.

Total employment was down at mid-year from earlier levels. This was true even though manufacturing employment increased in June. In that month, the unemployment rate, seasonally adjusted, stood at 7.9 percent.

Industrial production rebounded sharply in the second quarter but further improvement may be limited during the next two quarters. Plant openings as well as layoffs continue thus showing a wide diversity in the condition of the manufacturing sector among various Arkansas communities.

The construction industry continues in a weak posture. Activity in this sector in early 1988 resembled the levels of the recessionary period of the early 1980's and recent upturns in the interest rates may worsen the situation. There is geographic disparity in this industry also. Some locations may have overbuilt in recent years, while a few others are enjoying a current expansion in demand.

With recent indications that the rate of inflation is increasing, there is substantial concern with regard to further tightening of the money supply. At the same time, the value of the dollar is higher in the international currency market and this condition should aggravate balance of trade problems. These factors, in combination with the Presidential election, leave a great deal of uncertainty with respect to continued growth through 1989. Through 1988, however, the outlook for Arkansas Personal Income growth continues to be in the three percent range.

Labor Force and Employment

Arkansas

(Seasonally adjusted)

Year	Month	Civilian Labor Force (Units)	Total Employment (Units)	Agricultural Employment (Units)	Manufacturing Wage and Salary Employment (Units)	Unemployment Rate (Percent)
1980		999,000	923,000	65,100	210,050	7.7
1981		1,030,000	936,000	64,100	212,100	9.1
1982		1,018,000	919,000	63,440	195,625	9.8
1983		1,026,000	920,730	62,395	199,880	10.1
1984		1,044,000	951,000	61,600	209,750	8.9
1985*		1,051,000	960,000	46,250	210,317	8.6
1986		1,066,000	973,000	45,515	214,054	8.8
1987		1,088,000	1,000,000	45,000	219,000	8.1
	Jul.	1,078,642	990,854	44,669	218,444	8.0
	Aug.	1,085,916	994,751	44,326	219,957	8.3
	Sep.	1,095,222	1,004,401	44,019	222,694	8.1
	Oct.	1,101,089	1,009,283	43,835	224,155	8.1
	Nov.	1,108,680	1,019,261	44,016	224,681	7.9
	Dec.	1,121,986	1,032,291	44,116	224,851	7.9
1988	Jan.	1,119,291	1,034,813	44,673	224,359	7.9
	Feb.	1,130,871	1,047,587	44,815	225,466	7.6
	Mar.	1,135,903	1,048,624	44,905	226,082	7.6
	Apr.	1,136,610	1,050,605	44,800	225,783	7.7
	May	1,131,175	1,039,309	44,406	224,648	8.3
	Jun.	1,122,455	1,033,801	44,144	227,406	7.9

*Note: Labor Force and Employment data for the period1985 forward have been reestimated by the Employment SecurityDivision. The reestimation resulted in relatively large revisionsj in Agricultural Employment, with revisions to a less degree inTotal Employment and Civilian Labor Force data. Consequently, thedata for 1985 forward are not comparable to that for the priorperiod.

Personal Income

Quarterly Changes in Personal Income, Arkansas and United States

(Seasonally adjusted, Percent)

	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV	1987 Q-IV thru 1988 Q-I	1988 Q-I thru 1988 Q-II
Arkansas	+ 1.8	- 0.6	+ 1.0	+ 2.0	+ 1.1	NA
United States	+ 2.1	+ 1.6	+ 1.7	+ 2.8	+ 1.1	+ 1.7

Personal Income in Arkansas

(Seasonally adjusted, annual rate, Millions ofdollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	18,648	19,432	20,729	23,410	25,008	26,169	26,995	27,950
Apr-Jun	19,088	19,766	21,134	22,922	24,517	25,885	26,833[R]	
Jul-Sep	19,534	19,817	20,898	23,258	24,688	26,200	27,099[R]	
Oct-Dec	19,290	20,406	21,871	23,646	25,169	26,523	27,654[R]	
Annual	19,140	19,855	21,158	23,309	24,845	26,194	27,145[R]	

[R]Revised

Industrial Production

Quarterly Changes in Industrial Production Arkansas and United States

(Seasonally adjusted, Percent)

	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV	1987 Q-IV thru 1988 Q-I	1988 Q-I thru 1988 Q-II
Arkansas	+ 1.3	+ 2.5	+ 1.8	- 8.1	+10.4
United States	+ 1.1	+ 2.1	+ 1.7	+ 1.0	+ 1.1

Value Added by Manufacture in Arkansas

(Seasonally adjusted, annual rate, Millions of dollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	7,167.6	7,474.8	7,884.9	8,824.6	9,278.8	9,525.8	10,112.7[R]	9,825.5[R]
Apr-Jun	7,388.1	7,569.1	8,131.9	8,959.7	9,282.1	9,661.5	10,245.0[R]	10,852.0
Jul-Sep	7,601.8	7,581.8	8,398.0	9,078.2	9,351.9	9,758.6	10,489.8[R]	
Oct-Dec	7,589.5	7,746.9	8,522.0	9,165.2	9,425.3	9,984.0	10,690.8[R]	
Annual	7,436.8	7,593.2	8,234.2	9,006.9	9,334.5	9,732.5	10,384.6[R]	

[R]Revised

Cash Receipts from Farm Marketings

Quarterly Changes in Cash Receipts, Arkansas andUnited States

(Seasonally adjusted, Percent)

	1986 Q-III thru 1986 Q-IV	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987 Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV	1987 Q-IV thru 1988 Q-I
Arkansas	- 14.7	+ 4.2	+ 11.9	- 0.8	- 6.5	+ 12.8
United States	+ 6.5	+ 1.5	+ 2.0	- 3.9	+ 4.6	- 5.9

Cash Receipts from Farm Marketings in Arkansas

(Seasonally adjusted, annual rate, Thousands of dollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	3,023,940[R]	3,399,389[R]	2,741,619[R]	3,521,324[R]	3,363,628[R]	3,085,598[R]	2,964,346[R]	3,465,782[R]
Apr-Jun	3,612,735[R]	3,523,159[R]	2,455,942[R]	3,855,999[R]	3,227,535[R]	2,888,484[R]	3,316,185[R]	
Jul-Sep	3,726,639[R]	2,778,928[R]	3,062,947[R]	3,303,148[R]	3,152,621[R]	3,334,387[R]	3,288,045[R]	
Oct-Dec	3,203,139[R]	3,315,654[R]	3,084,389[R]	3,233,516[R]	3,439,215[R]	2,844,038[R]	3,073,323[R]	
Annual	3,391,613[R]	3,254,283[R]	2,836,224[R]	3,478,497[R]	3,295,750[R]	3,038,127[R]	3,160,475[R]	

[R]Revised

Waterborne Commerce: McClellan-Kerr Arkansas River Navigation System

Quarterly Changes in Total and Internal Tonnages

(Seasonally adjusted, Percent)

	1986 Q-IV thru 1987 Q-I	1987 Q-I thru 1987 Q-II	1987Q-II thru 1987 Q-III	1987 Q-III thru 1987 Q-IV	1987 Q-IV thru 1988 Q-I	1988 Q-I thru 1988 Q-II
Total	- 1.3	+ 26.5	- 17.2	+ 7.5	+ 0.7	- 17.6
Internal	+ 23.3	+ 5.0	- 14.9	+14.0	- 25.6	+ 6.7

Freight Traffic

(Seasonally adjusted, annual rate, Thousands ofshort tons)

Time Period		Traffic Tonnages			
		Inbound	Outbound	Internal	Total[1]
1979		2,026	3,456	2,932	8,926
1980		1,611	4,643	2,408	9,133
1981		1,564	5,684	1,741	9,446
1982		1,520	4,611	1,561	8,258
1983		1,918	3,905	1,904	8,017
1984		2,128	4,264	2,433	9,490
1985		2,103	3,191	2,521	8,335
1986		2,608	3,453	2,962	9,703
1987[2]		2,131	3,348	2,752	8,885
	Jul-Sep	2,172	3,072	2,497	8,383
	Oct-Dec	2,231	3,749	2,847	9,007
1988					
	Jan-Mar	2,808	3,259	2,118	9,071
	Apr-Jun	1,745	3,035	2,259	7,474

[1]Total tonnage includes "through traffic."

[2]Sum of quarters does not equal annual totals because of moving seasonal adjustment factors.

Arkansas Construction Contracts

Residential Construction Contracts

(Seasonally adjusted, annual rate, Thousands of dollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	717,612	476,187	831,974	969,402	770,219	842,884	652,950	600,875
Apr-Jun	649,981	603,575	924,270	975,481	784,590	651,928	632,556	549,200
Jul-Sep	554,668	700,788	930,843	930,327	705,496	763,760	647,747	
Oct-Dec	609,014	811,514	933,212	797,304	801,647	701,708	661,759	
Annual	632,818	648,016	905,075	918,128	765,488	742,570	648,753	

Nonresidential Construction Contracts

(Seasonally adjusted, annual rate, Thousands of dollars)

	1981	1982	1983	1984	1985	1986	1987	1988
Quarter								
Jan-Mar	363,356	389,417	286,833	461,592	386,837	476,516	400,391	392,002
Apr-Jun	279,378	212,698	359,775	444,186	411,369	328,485	483,757	294,073
Jul-Sep	252,037	306,050	370,032	507,932	454,883	541,870	420,714	
Oct-Dec	307,569	213,596	449,173	450,036	562,806	311,998	323,122	
Annual	300,585	280,440	366,453	465,937	453,974	414,717	406,996	

ARKANSAS LABOR FORCE ESTIMATES
July 1988, Not Seasonally Adjusted

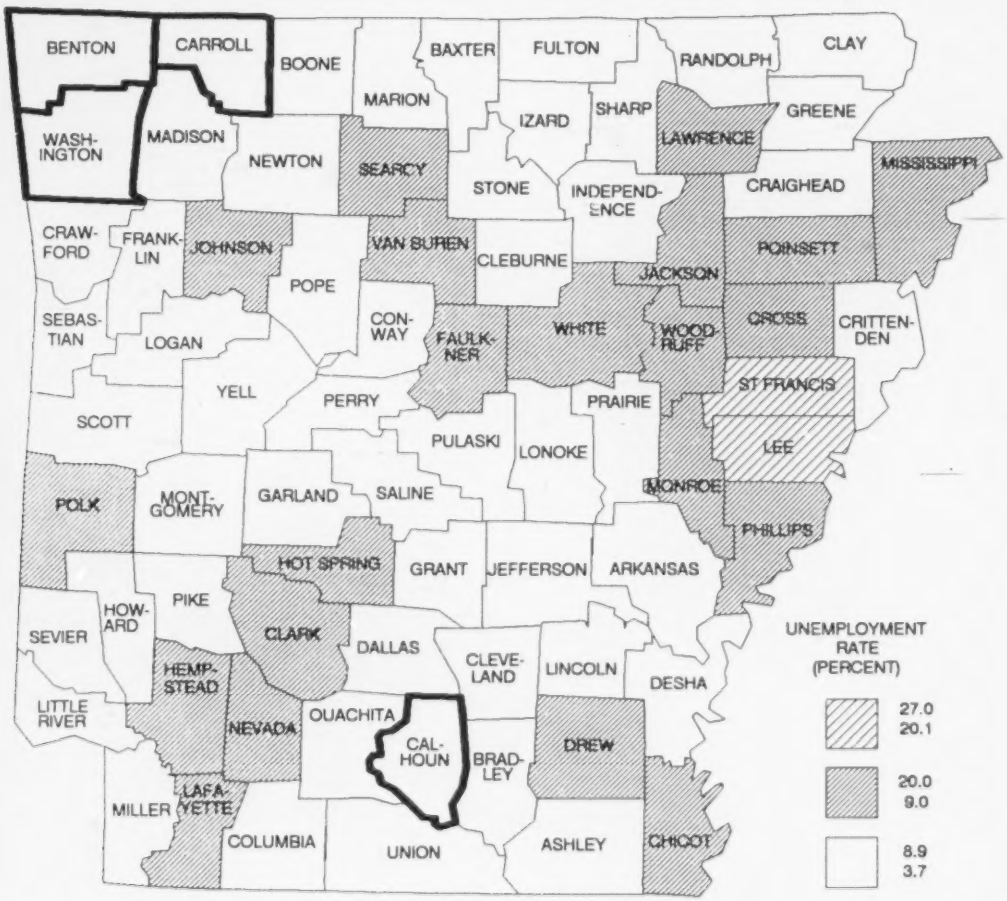
Area	Civilian Labor Force	Unemployment Rate	Total Employment
UNITED STATES	123,889,000	5.5	117,066,000
STATE OF ARKANSAS	1,123,300	7.7	1,036,600
Fayetteville-Springdale MSA	60,450	4.5	57,725
Fort Smith MSA	94,900	6.1	89,075
Little Rock-North Little Rock MSA	264,675	6.6	247,175
Pine Bluff MSA	37,225	8.9	33,925

County	Civilian Labor Force	Unemployment Rate	Total Employment	County	Civilian Labor Force	Unemployment Rate	Total Employment
Arkansas	10,525	5.7	9,925	Lee	4,850	22.7	3,750
Ashley	11,100	7.9	10,225	Lincoln	4,275	8.2	3,925
Baxter	11,325	6.0	10,650	Little River	5,275	8.1	4,850
Benton	51,425	3.8	49,475	Logan	9,400	8.0	8,650
Boone	15,150	6.8	14,125	Lonoke	17,225	5.7	16,250
Bradley	4,850	8.2	4,450	Madison	5,050	5.9	4,750
Calhoun	5,450	3.7	5,250	Marion	6,525	5.7	6,150
Carroll	10,950	4.3	10,475	Miller	18,100	8.8	16,500
Chicot	5,625	12.0	4,950	Mississippi	22,575	15.0	19,200
Clark	9,275	9.2	8,425	Monroe	5,075	9.4	4,600
Clay	8,600	7.8	7,925	Montgomery	3,125	8.0	2,875
Cleburne	8,575	7.0	7,975	Nevada	4,325	12.1	3,800
Cleveland	3,450	7.2	3,200	Newton	4,100	7.3	3,800
Columbia	11,875	6.9	11,050	Ouachita	13,775	8.5	12,600
Conway	7,750	8.4	7,100	Perry	4,450	7.9	4,100
Craighead	36,925	5.6	34,875	Phillips	9,750	15.1	8,275
Crawford	21,225	6.6	19,825	Pike	4,650	8.1	4,275
Crittenden	23,175	8.3	21,250	Poinsett	10,925	9.8	9,850
Cross	8,200	10.7	7,325	Polk	6,925	10.1	6,225
Dallas	4,375	6.3	4,100	Pope	24,050	6.4	22,500
Desha	7,225	8.0	6,650	Prairie	4,775	7.3	4,425
Drew	8,350	9.9	7,525	Pulaski	190,875	6.3	178,925
Faulkner	27,150	9.9	24,450	Randolph	7,450	8.7	6,800
Franklin	6,000	8.3	5,500	St. Francis	11,575	27.0	8,450
Fulton	4,025	8.7	3,675	Saline	29,425	6.4	27,550
Garland	32,100	8.1	29,500	Scott	6,000	5.8	5,650
Grant	6,125	7.3	5,675	Searcy	3,675	9.5	3,325
Greene	14,500	7.9	13,350	Sebastian	55,675	6.2	52,200
Hempstead	9,825	11.2	8,725	Sevier	6,550	7.3	6,075
Hot Spring	11,050	12.0	9,725	Sharp	6,450	7.4	5,975
Howard	6,100	6.6	5,700	Stone	4,025	6.8	3,750
Independence	15,925	8.3	14,600	Union	20,700	8.3	18,975
Izard	4,850	7.2	4,500	Van Buren	5,950	9.2	5,400
Jackson	8,300	13.0	7,225	Washington	60,450	4.5	57,725
Jefferson	37,225	8.9	33,925	White	25,600	9.9	23,075
Johnson	7,000	11.4	6,200	Woodruff	4,100	13.4	3,550
Lafayette	3,275	10.7	2,925	Yell	8,675	6.1	8,150
Lawrence	8,075	10.2	7,250				

Source: The Research and Statistics Section, Arkansas Employment Security Division, August 1988.

Labor Force Estimates
July 1988

In July, Arkansas' Civilian Labor Force fell 7,300 to total 1,123,300. Total Employment fell 5,500 to total 1,036,600. As a result, Unemployment fell 1,800 to 86,700. Of the 75 counties, Calhoun had the lowest unemployment rate, 3.7 percent, and St. Francis the highest, 27.0 percent. Unemployment rates in 30 counties were below the state's 7.7 percent rate, but in 15 counties were over 10 percent. In the MSAs, Fayetteville-Springdale had the lowest rate, 4.5 percent, and Pine Bluff had the highest, 8.9 percent. Fort Smith and Little Rock-North Little Rock MSA rates were 6.1 and 6.6 percent, respectively.



Boundary lines of counties having an unemployment rate less than or equal to the national average of 5.5%

Bureau of Business and Economic Research
College of Business Administration
University of Arkansas
Fayetteville, Arkansas 72701

CONSUMER PRICES—ALL URBAN CONSUMERS

In June, the consumer price index for all urban consumers rose 0.3 percent, seasonally adjusted (0.4 percent not seasonally adjusted). The index was 4.0 percent above its year-earlier level.

[1982–84 = 100, except as noted; monthly data seasonally adjusted, except as noted]

Period	All items [1]		Food	Housing					Fuel and other utilities	Apparel and upkeep	Transportation			Medical care	Energy [2]	All items less food, shelter, and energy
				Total [1]	Shelter						Total [1]	New cars	Motor fuel			
	Not seasonally adjusted (NSA)	Seasonally adjusted			Total	Renters' costs (Dec. 1982 = 100)	Homeowners' costs (Dec. 1982 = 100)	Maintenance and repairs (NSA)								
Rel. imp. [3]	100.0	.....	16.1	42.5	27.8	7.9	19.7	0.2	7.7	6.3	17.5	4.4	3.3	5.8	7.6	48.5
1980	82.4	.....	86.8	81.1	81.0	.....	.....	82.4	75.4	90.9	83.1	88.4	97.4	74.9	86.0	80.6
1981	90.9	.....	93.6	90.4	90.5	.....	.....	90.7	86.4	95.3	93.2	93.7	108.5	82.9	97.7	88.3
1982	96.5	.....	97.4	96.9	96.9	.....	.....	96.4	94.9	97.8	97.0	97.4	102.8	92.5	99.2	95.1
1983	99.6	.....	99.4	99.5	99.4	103.0	102.5	99.9	100.2	100.2	99.3	99.9	99.4	100.6	99.9	100.0
1984	103.9	.....	103.2	103.6	104.0	108.6	107.3	103.7	104.8	102.1	103.7	102.8	97.9	106.8	100.9	105.0
1985	107.6	.....	105.6	107.7	109.8	115.4	113.1	106.5	106.5	105.0	106.4	106.1	98.7	113.5	101.6	109.0
1986	109.6	.....	109.0	110.9	115.8	121.9	119.4	107.9	104.1	105.9	102.3	110.6	77.1	122.0	88.2	112.7
1987	113.6	.....	113.5	114.2	121.3	128.1	124.8	111.8	103.0	110.6	105.4	114.6	80.2	130.1	88.6	117.0
1987: June	113.5	113.5	113.9	114.0	120.8	127.5	124.4	111.1	103.0	110.8	105.3	114.4	80.1	130.0	88.5	116.9
July	113.8	113.8	113.8	114.2	121.2	128.5	124.5	113.2	103.1	109.9	105.9	114.8	81.1	130.7	88.7	117.3
Aug	114.4	114.3	113.9	114.8	121.9	128.9	125.4	112.9	103.6	110.3	106.7	115.0	83.8	131.3	90.2	117.6
Sept	115.0	114.6	114.5	115.0	122.2	128.8	125.9	112.7	103.3	111.3	106.8	115.2	83.2	131.9	89.8	117.9
Oct	115.3	115.0	114.7	115.3	122.8	128.6	126.9	112.8	103.0	112.7	107.2	115.5	83.0	132.4	89.3	118.5
Nov	115.4	115.3	114.8	115.5	123.1	128.8	127.2	113.5	103.4	113.1	107.7	115.7	83.0	133.0	89.6	118.9
Dec	115.4	115.5	115.3	115.9	123.8	129.5	127.9	113.3	103.3	112.2	107.4	115.7	81.6	133.5	88.9	118.9
1988: Jan	115.7	115.9	115.6	116.4	124.5	130.9	128.4	113.7	103.2	112.3	107.3	115.5	80.4	134.6	88.3	119.5
Feb	116.0	116.1	115.3	116.8	125.1	131.5	129.0	114.3	103.7	112.0	107.1	115.8	78.9	135.4	87.8	119.8
Mar	116.5	116.7	115.7	117.2	125.7	133.0	129.3	113.3	103.5	114.2	107.2	116.2	79.2	136.0	87.8	120.4
Apr	117.1	117.2	116.5	117.5	125.8	132.6	129.6	115.3	104.0	116.5	107.5	116.2	80.1	136.8	88.5	121.1
May	117.5	117.6	117.0	117.8	126.2	132.8	130.0	114.3	103.9	116.5	108.2	116.4	81.5	137.7	88.9	121.5
June	118.0	118.0	117.7	118.2	126.7	133.3	130.6	114.7	104.0	116.1	108.4	116.6	80.8	138.3	88.7	121.8

[1] Includes items not shown separately.

[2] Household fuels—gas (piped), electricity, fuel oil, etc.—and motor fuel. Motor oil, coolant, etc. also included through 1982.

[3] Relative importance: December 1987.

Note.—Beginning with data for January 1988, the reference base was changed from 1967 = 100 to 1982–84 = 100.

Data beginning 1983 incorporate a rental equivalence measure for homeownership costs and therefore are not strictly comparable with figures for earlier periods.

Data beginning 1987 and 1988 calculated on a revised basis.

Source: Department of Labor, Bureau of Labor Statistics.

UNIVERSITY OF ARKANSAS
Bureau of Business and Economic Research
College of Business Administration
Fayetteville, Arkansas 72701

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